PHYSICIAN MANPOWER IN CANADA

1980 - 2000

A REPORT OF THE FEDERAL/PROVINCIAL

ADVISORY COMMITTEE ON HEALTH MANPOWER

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FOREWORD

PHYSICIAN MANPOWER IN CANADA
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A REPORT OF THE FEDERAL/PROVINCIAL/TERRITORIAL ADVISORY COMMITTEE ON HEALTH MANPOWER

The Federal/Provincial/Territorial Advisory Committee on Health Manpower is an advisory committee to the Federal/Provincial/Territorial Conference of Deputy Ministers of Health. In late 1982 the Deputy Ministers directed the Committee to undertake a short-term study on medical manpower in Canada. This Report is the result of that study.

The Report is being released at this time to encourage national discussion on the supply and requirements for medical manpower now and in the future, and to provide a basis for consultation on this important topic with the many interested organizations.

Comments on the Report and requests for direct consultation should be directed to:

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EXECUTIVE SUMMARY
PHYSICIAN MANPOWER IN CANADA
1980 - 2000

A Report of the Federal-Provincial Advisory Committee on Health Manpower

I. INTRODUCTION

Physician manpower supply, requirements, distribution and costs have for many years been a major concern in Canada. From 1961-80 the physician supply (exclusive of interns/residents) increased 105% from 18,363 to 37,667. The population increased only 33% over the same period, with the result that the physician:population ratio increased from 1:1004 to 1:643. If present trends continue, the growth of physician supply will continue to exceed population growth with an even higher physician:population ratio of 1:505 by the year 2000.

In this context the Conference of Deputy Ministers of Health established, in November 1980, a Special Committee to review the physician manpower situation in Canada. And in follow-up, in late 1982 the Federal-Provincial Advisory Committee on Health Manpower was directed to proceed with a short-term study on medical manpower. This Report is the result of that study and is a positive reflection of the degree of federal-provincial and inter-provincial cooperation which has taken place.

II. GENERAL APPROACH

The objective of this report has been to identify Canadian physician manpower requirements (up to the year 2000), and to recommend policy options which would allow physician supply in Canada to balance, as far as practical, those requirements by the year 2000. The general methodological approach taken was to firstly project physician supply, and then estimate physician requirements to the year 2000. A comparison of projected supply and requirements shows the surplus (or shortage). Various policy options are then reviewed and recommendations made.

III. PROJECTED PHYSICIAN SUPPLY AND REQUIREMENTS TO THE YEAR 2000

In this report, projections of physician supply and requirements exclude interns/residents and physicians in the military. Broad specialty groupings are referred to: General Practice, Medical Specialties, Surgical Specialties, and Laboratory Specialties. The specialties under each of these broad headings are listed in the Report (p. 5).

According to Sales/Marketing Systems (S.M.S.) data, with some amendments based on additional information from individual provinces, there were 37,667 active civilian physicians in Canada as of December 1980. The physician supply or stock in the year 2000 will be a net result of additions to the 1980 stock, minus losses over this 20 year period. Projections of additions and losses were derived and are detailed in the report. Results by broad specialty grouping are shown below:

	Physician Supply	
	1980	2000
General Practice	19,219	31,488
Medical Specialties	9,368	14,978
Surgical Specialties	6,506	7,225
Laboratory Specialties	2,574	3,232
TOTAL	37,667	56,923

Physician requirements for 1980, by specialty, were established by nine provinces and the two territories. (Manitoba did not participate in the national study as it was actively concentrating on its own provincial study at the time.) Projected requirements for the year 2000 are assumed to increase because of population growth (age-sex adjusted for a more elderly demographic mix); increasing proportion of female physicians in stock (as on average female physicians provide fewer services); and a

* New title: Southam Medical Data Base (SMDB)

stated intention from Quebec to increase its General Practitioner stock by 2,495 by the year 2000. Details of the calculations are found in the report. Results by broad specialty grouping are shown below:

	Physician Requirements	
	1980	2000
General Practice	18,535	26,618
Medical Specialties	9,322	12,483
Surgical Specialties	6,286	8,219
Laboratory Specialties	2,696	3,621
TOTAL	36,839	50,941

A comparison of physician supply and requirements for 1980 and 2000 show that an overall 2.2% surplus of 828 physicians in 1980 is projected to increase to a 12% surplus of 5982 physicians in 2000. Moreover, the projected surplus is concentrated in General Practice and Medical Specialties. Indeed, there are projections of shortages for Surgical and Laboratory Specialties:

	For the Year 2000		
	Supply	Requirements	Surplus (Shortage)
General Practice	31,488	26,618	4,870
Medical Specialties	14,978	12,483	2,495
Surgical Specialties	7,225	8,219	(994)
Laboratory Specialties	3,232	3,621	(389)
TOTAL	56,923	50,941	5,982

It is worth noting that the projected physician supply is conservative in that the increase in Canadian medical school enrollment which has taken place in recent years is not incorporated in the 1979-82 averages used in projecting supply. Thus, if anything, the projected surplus may be understated.

IV. POLICY OPTIONS

To mitigate the projected physician oversupply, policy options impacting on physician supply are available in four areas: (1) physicians from abroad, (2) postgraduate training positions, (3) Canadian medical school enrollment, (4) distribution/payments to physicians.

With regards to policies on physicians from abroad, the Report focuses on physician immigration and foreign medical graduates. Recent data suggests that about 380 landed immigrant physicians/year enter Canada. Of these about 138/year are "selected" (i.e. filling a position which cannot be filled by a qualified Canadian) and the remaining 242 are sponsored relatives or refugee physicians. By the nature of the "selected" definition, the 138 selected physicians likely become licensed and part of stock. However, because of licensure regulations it is estimated that only about 50% of the sponsored/refugee group eventually become licensed (i.e. about 121/year). It is further estimated that about 55 Canadian graduates of foreign medical schools per year enter the Canadian postgraduate training system and eventually enter Canadian physician stock. Additionally, at any one time there are estimated to be about 183 physicians working in Canada on temporary visas. A more detailed discussion is found in the Report, but in summary, the Report recommends measures to reduce the number of sponsored/refugee physicians entering active Canadian physician stock (recognizing that the legal and constitutional implications of further limiting licensure must be considered prior to implementation), a reduction in the "selected" physicians allowed to enter Canada, and a reduction in the number of physicians practising on temporary work visas.

With regards to policies on postgraduate training positions, it is recognized that any reductions in overall positions should take into account students presently enrolled in Canadian medical schools. In

other words, if reductions in medical school enrollment were implemented for September 1985, the postgraduate training system would continue to have existing levels of intake from Canadian schools until 1989. Furthermore, any reductions in postgraduate training will not impact physician specialty supply for four or more years (given the length of postgraduate training programs). The Report discusses in some detail these timeframes in the context of the projections of physician supply and requirements, and recommends that the output from Canadian postgraduate training into stock of General Practitioners be reduced by encouraging trainees to proceed to Surgical and Laboratory Specialties; and over and above this, that there be a 20% reduction in output from Canadian postgraduate training of General Practitioners and Medical Specialties. Further, given that a significant proportion of the Canadian postgraduate training positions are filled by trainees on temporary visas, the Report recommends more stringent measures to ensure visa trainees return to their country of origin. It should be noted that given the available timeframes, even if the Report's recommendations are fully implemented, there is still a projected physician surplus in the year 2000.

Reductions in output from postgraduate training imply corresponding reductions in medical school enrollment. As discussed in the Report, it is estimated that a 17% reduction in first year entry class, effective 1985, would be required to enable implementation of the recommendations related to reductions in postgraduate training some 4-5 years following. Alternatively, the reduction in medical school enrollment could be phased in over a three year period, necessitating a phased reduction in postgraduate training output.

With regards to issues of distribution of physicians, and payments to physicians, the Report stresses that the feasibility of effectively implementing recommendations and policies regarding physician supply depend in large part on effective measures to address specialty and geographic distribution of physicians and limits on the increase of medical costs.

V. RECOMMENDATIONS

The impact of each recommendation is summarized in the table on page (ix). Inasmuch as some of the recommendations have fairly tight timeframes, an outline to develop specific implementation strategies has been prepared, and is attached for consideration by the Conference of Deputy Ministers should this Report and its recommendations be approved in principle.

Recommendation 1:

That the federal and provincial governments maintain and improve the national physician manpower data base by consolidating individual provincial data, with the Federal-Provincial Advisory Committee on Health Manpower to continue as a national coordinating body on physician manpower. There should be administrative and research staff specifically to support ongoing study of physician manpower (e.g. as affected by changes in health technology).

Recommendation 2:

That the annual entry of "selected" immigrant physicians to Canada be reduced from about 140/year to about 50/year by 1986.

Recommendation 3:

That the annual addition to Canadian physician stock from physicians trained abroad (i.e. foreign medical graduates including Canadian citizens), exclusive of those "selected" immigrant physicians, be reduced from about 176/year to about 115/year by 1990.

Recommendation 4:

That the number of physicians practising in Canada on temporary visas be reduced by at least 50% (from about 200 to 100) by the year 2000.

Recommendation 5:

That by 1986 the annual output from Canadian postgraduate training into General Practice be reduced by 125/year, and concurrently that there be an increase in Surgical and Laboratory postgraduate training positions to provide for a corresponding increase in output from those specialties.

Recommendation 6:

That by 1991 there be a 20% reduction in output from Canadian postgraduate training to General Practice stock. (This is additional to the 125/year reduction effective 1986).

Recommendation 7:

That by 1994 there be a 20% reduction in output from Canadian postgraduate training to Medical Specialties stock. (This necessitates a reduction in Medical Specialties postgraduate training positions effective 1990.)

Recommendation 8:

That the specialty-specific number of postgraduate training positions be rationalized, including consideration of regionalizing selected programs in accordance with present and projected shortages (or surpluses).

Recommendation 9:

That the relevant federal and provincial staff explore mechanisms for ensuring that visa trainees return to their country of origin.

Recommendation 10:

That Canadian medical school enrollment (entry class) be reduced 17% effective 1985. (Alternatively, reductions could be phased in over a three year period. Adjustments to postgraduate training would then also have to be phased in over a three year period.)

Recommendation 11:

That effective measures be adopted to ensure physicians establish only in areas of demonstrated need for medical services.

CUMULATIVE IMPACT OF IMPLEMENTING RECOMMENDATIONS ON PROJECTED CANADIAN PHYSICIAN SUPPLY

	1980	1990	2000
I. Projected Continuation of Present Trends/Policies	37,667	48,819	56,923
II. Impact of Recommendations*			
1. Maintain and improve physican data base			
2. Reduce entry of "selected" immigrant physicians		-450	-1350
3. Reduce FMG's licensed in Canada		- 60	- 660
4. Reduce number of temporary visa physicians in practice			- 100
5. Switch GP's to Surgical/ Laboratory Specialties		-500	- 500
6. Reduce GP output from Canadian PG training (20%)			-1820
7. Reduce Medical Specialist Output from Canadian PG Training (20%)			- 770
8. Rationalize PG Training Programs			
9. Visa Trainees to return to home country			
10. Reduce Canadian Medical School Enrollment (17%)			
11. Adopt effective measures to better distribute physicians			
TOTAL IMPACT OF RECOMMENDATIONS		-1,010	-5,200
III. Projected Supply if All Recommendations are Implemented		47,809	51,723
IV. Projected Requirements in the Year 2000**			50,941

* Some recommendations do not have a direct and immediate impact on physician supply, but are essential to the implementation of the recommendations that do impact on supply (e.g. medical school enrollment reduction is a necessary step preceding reduction in output from Canadian PG training).

** It is of interest to note that even if all the recommendations are 100% successful, there is still a projected surplus in the year 2000.

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PHYSICIAN MANPOWER IN CANADA
1980 - 2000

A Report of the Federal-Provincial Advisory Committee on Health Manpower

I. INTRODUCTION

Physician manpower supply, requirements, distribution, and costs have for many years been a major concern in Canada. The important role of physicians in our health care system in both primary and specialty medical care, as well as their influence on the use of other health care resources (e.g. hospitals), is well recognized. Whereas twenty years ago studies were prompted by concerns of projected physician shortages, today the impetus is a concern that there is a present and potentially increasing physician oversupply. From 1961-80 the physician supply (excluding interns and residents) in Canada increased 105% from 18,363 to 37,667. The population increased at a much lesser rate (33%) with the result that the physician:population ratio increased from 1:1004 to 1:643. And the 1980 Hall Report suggested that the number of physicians relative to the Canadian population would continue to increase to the year 2000. Governments which fund physician services directly through provincial medical insurance plans, and other physician influenced health services through hospital and other insurance programs, are concerned particularly that physician oversupply is related to the continuing rise in health care utilization and costs. Moreover, there is concern about effects on quality of medical care resulting from physician oversupply.

In recent years, a number of physician manpower reviews have been conducted. In the United States, the Graduate Medical Education National Advisory Council completed their 5 year, $5 million study which projected that the United States may have a surplus of 70,000 physicians by the end of this decade. In Canada, studies include the Report of the National Committee on Physician Manpower, the Western Canada Health Manpower Study ("Peat Marwick Study"); reports from the Council of Ontario Faculties of Medicine Postgraduate Manpower Committee ("Low Committee") and the Ontario Council of Health Task Force on Medical Manpower ("Macdonald Report"); Report of the Joint Committee on Medical Manpower (B.C.);

Maritime Provinces Higher Education Commission Study and ongoing studies in some other Provinces. It is clear that a significant surplus of physicians is imminent, that a national planning strategy is required, and that a multifaceted integrated management plan is required if the growth in physician numbers and health care costs is to be contained.

In this context, the Conference of Deputy Ministers of Health established, in November 1980, a Special Committee to review the physician manpower situation in Canada. Its report was submitted in February 1981, and among other things, it proposed an overall 10% reduction in the enrollment of first year medical students because of projected physician oversupply. However, it was felt by the Conference of Deputy Ministers that more detailed analysis and review were indicated.

Consequently in late 1982, after a further report by the Special Committee and consultation among the Federal and Provincial Deputies, the Federal-Provincial Advisory Committee on Health Manpower was directed to proceed with a short-term study on medical manpower. This report is a result of that study.

The objective of this report has been to identify Canadian physician manpower requirements (up to the year 2000), and to recommend policy options which would allow physician supply in Canada to balance, as far as practical, those requirements by the year 2000. Such a study required much coordination and concerted effort at both federal and provincial levels, and the production of this report is a positive reflection of the degree of federal-provincial and inter-provincial cooperation which has taken place.

Section II of this report outlines the general approach taken. Details of projected physician supply and requirements are presented in Section III, which concludes by noting the projected surplus or shortage in the year 2000, by broad specialty grouping. Policy options are then discussed in Section IV, and the report's recommendations summarized in Section V.

II. GENERAL APPROACH

The general approach can be understood by reference to Figure 1, (p. 4). The study first projected the physician supply in the year 2000 if present trends and policies with respect to medical school enrollment, postgraduate training positions, physician immigration, retirements/deaths etc., remain unchanged. The study then estimated target requirements, using 1980 as the reference year, and projected the required number of physicians (by specialty) in Canada in the year 2000, incorporating adjustments for: (1) increased population and changing age-sex mix; (2) increased number of female physicians who on average provide a lesser volume of services than their male counterparts; (3) and an increased number of general practitioners relative to specialists in Quebec, a stated policy goal of that province.

A comparison of projected requirements and supply shows the surplus (or shortage) of physicians, by specialty, in the year 2000.

Various policy options which can be implemented to mitigate the surplus (or shortage) are then reviewed and recommendations made. The major data source for this study was Sales/Marketing Systems (S.M.S.),* a division of Southam Communications Ltd., which has been recording physicians and their movements in Canada and supplying data to Health and Welfare Canada on a contract basis for the past 16 years. (See Appendix II.a. for details of the S.M.S. data base.) This data base, at the time of the study, was the best available information on physicians nation-wide. The study's methodology also employs a number of assumptions in its projections, some of which are relatively dependable (e.g. population growth) and some of which are the considered collective, although not necessarily unanimous, judgement of members of the Federal-Provincial Advisory Committee. The policy options and recommendations of this study are tempered by an awareness of its methodological limitations.

* New title: Southam Medical Data Base (SMDB).

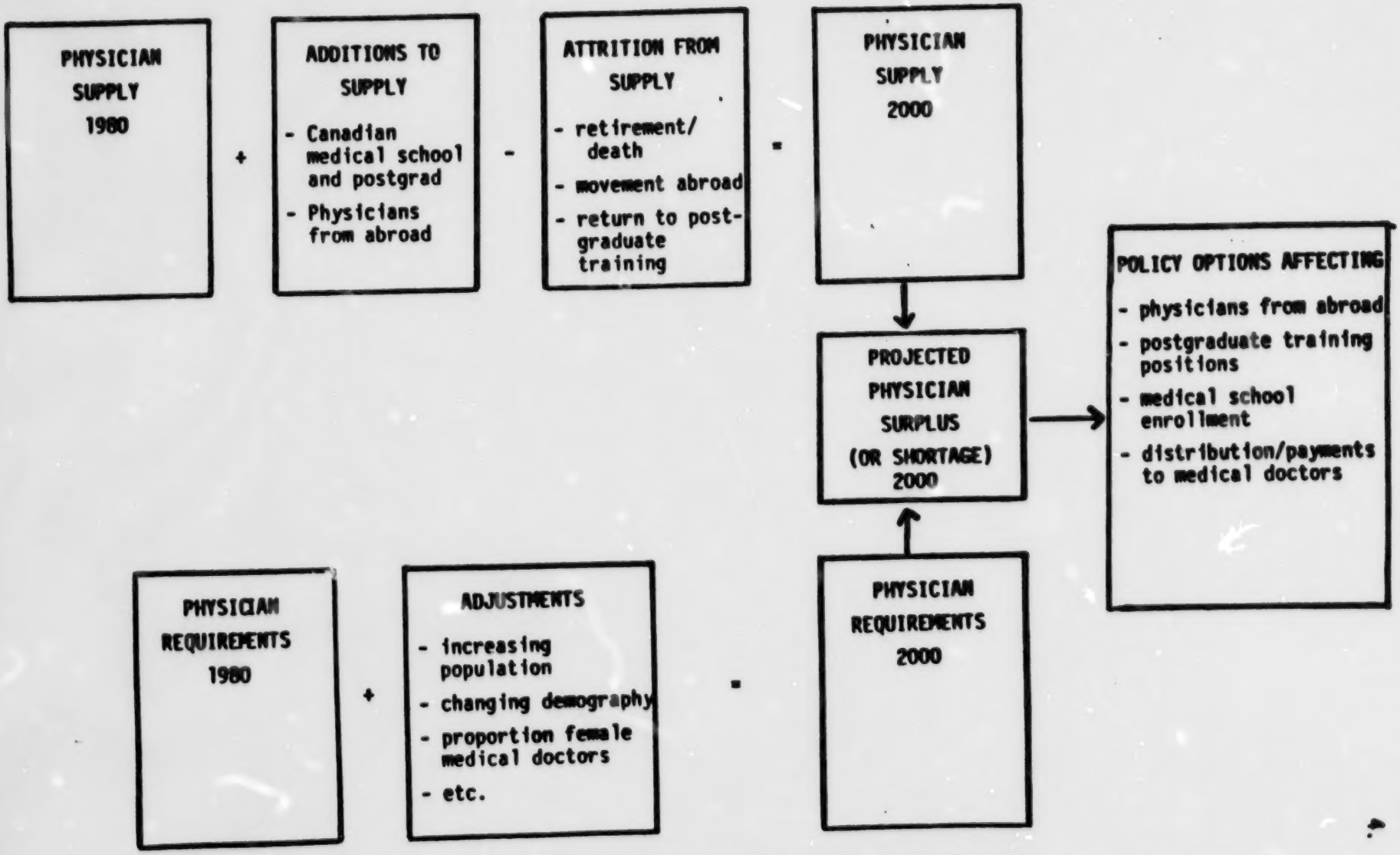

FIGURE 1: Projected Physician Supply and Requirements

III. PROJECTED PHYSICIAN SUPPLY AND REQUIREMENTS TO THE YEAR 2000

The following discussion of physician supply and requirements refers to broad groupings of General Practice, Medical Specialties, Surgical Specialties, and Laboratory Specialties, rather than listing each specialty separately. The groupings are shown below; data by separate specialty can be found in the Appendices.

BROAD SPECIALTY GROUPING

General/Family Practice	Medical Specialties	Surgical Specialties	Laboratory Specialties
	-Internal Medicine (+ Subspecialties)	-General Surgery	-Nuclear Medicine
	-Dermatology	-Cardiovascular/ Thoracic	-Medical Biochemistry
	-Neurology	-Neurosurgery	-Medical Microbiology
	-Paediatrics	-Obstetrics/ Gynaecology	-Pathology
	-Physical Medicine	-Ophthalmology	-Diagnostic Radiology
	-Psychiatry	-Orthopaedic Surgery	-Radiation Oncology
	-Public Health	-Otolaryngology	
	-Anaesthesia	-Plastic Surgery	
		-Urology	

Projections of physician supply and requirements refer to civilian physicians. Physicians in the military (0.6% of physicians in Canada) are not explicitly considered. The projections also exclude interns and residents.

Projected Physician Supply (1981 - 2000)

According to S.M.S. data (with some amendments based on additional information from individual provinces), there were 37,667 active civilian physicians in Canada as of December 1980. Details are shown in Appendix I. The physician supply or stock in the year 2000 will be a net result of additions to the 1980 stock, minus losses over this 20 year period.

Additions to physician stock can be categorized based on the S.M.S. data system as (1) directly from Canadian postgraduate training; (2) returnees from abroad; (3) new entrants to the system. Detailed definitions of these categories are found in Appendix II.a. The 1979-1982 average annual addition from these sources is detailed in Appendix II.b., and summarized below by broad specialty grouping. For the purposes of this projection, similar average annual additions are assumed to continue to the year 2000.

TABLE 1

	PROJECTED AVERAGE ANNUAL ADDITION 1981-2000
General Practice	1360
Medical Specialties	654
Surgical Specialties	285
Laboratory Specialties	129
TOTAL	2428

Losses from physician stock arise from (1) retirements/deaths; (2) movement abroad; (3) return to postgraduate training. Estimates of retirements/deaths were based on Canadian experience and S.M.S. data on physicians who retired or died 1979-82, showing an average period of 39 years from a physician obtaining his basic M.D. to retirement/death (see Appendix III. a. for details by specialty). Although the average number of years between medical graduation and death/retirement varied slightly by specialty, it was concluded that these differences were not of sufficient magnitude to be incorporated separately into the projection model for each specialty.

Movement abroad was estimated as 330/year for 1981-1990, and 270/year for 1991-2000, allocated to specialties according to historical experience (see Appendix III.b.). These figures are lower than recent experience (with an average movement abroad of 416 physicians/year from 1980-82) as it was felt that policies in other developed nations, especially in the United States, in the face of a physician oversupply in those countries will significantly reduce the number of Canadian physicians moving abroad.

Each year a number of physicians return for further postgraduate training, and are "lost" from active stock (later forming a part of the output from Canadian PG training). Return to postgraduate training was based on S.M.S. data over the period 1979-82 (see Appendix III. c.).

The projected average annual losses from these sources is summarized below. The detail by separate specialties and source of loss is presented in Appendix III.d. The higher average annual loss in the second decade results from higher attrition rates from death/retirement (i.e. the age mix of physician stock indicates more retirements/deaths for 1991-2000 than for the preceding decade).

TABLE 2

	PROJECTED AVERAGE ANNUAL LOSSES	
	1981-1990	1991-2000
General Practice	689	805
Medical Specialties	325	422
Surgical Specialties	222	275
Laboratory Specialties	77	115
TOTAL	1,313	1,617

Allowing for projected annual additions and losses, (as shown in Tables 1 and 2 respectively) the physician supply, if present trends and policies continue, is shown below in Table 3. It is worth noting that these are conservative in that the projected supply for the end of 1983 is 41,012 whereas the actual S.M.S. data indicates 41,400. Moreover, the increase of Canadian medical school entrants which has taken place (from 1807 in the year 1975 to 1881 in the year 1983) is not reflected in

the 1979-82 averages used in projecting additions to stock. Thus, projected supply underestimates additions to stock as the increased class size enter active stock. These additional medical graduates could potentially add up to 1,000 or more physicians to the Canadian supply projections (to the year 2000) used in this report. To reiterate, the supply projections in this report are conservative so that, if anything, projected surpluses may be understated.

TABLE 3

	Physician Supply		
	1980	1990	2000
General Practice	19,219	25,935	31,488
Medical Specialties	9,368	12,658	14,978
Surgical Specialties	6,506	7,130	7,225
Laboratory Specialties	2,574	3,096	3,232
TOTAL	37,667	48,819	56,923

Projected Physician Requirements (1981 - 2000)

Physician requirements for 1980, by specialty, were established independently by nine provinces and the two territories*. These targets incorporate not only physician requirements for "clinical" services, but also physician requirements in teaching, administration, and research. The results by broad specialty grouping are shown below, (for specialty specific detail, see Appendix IV).

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* Manitoba did not participate in the national study as it was actively concentrating on its own provincial study at the time. Target requirement physician:population ratio for that province were derived from population weighted averages of the targets supplied for the rest of Canada.

TABLE 4

	1980 Requirements
General Practice	18,535
Medical Specialties	9,322
Surgical Specialties	6,286
Laboratory Specialties	2,696
TOTAL	36,839

Thus, given the physician supply (shown in Table 3), there was in 1980 an overall surplus of about 800 physicians in Canada, although on a specialty-specific basis, laboratory specialists showed a shortage. Of course, province-specific shortages or surpluses are not shown in looking at the overall national picture. The 1980 physician supply and target requirements, by broad specialty grouping, are compared below expressed in numbers of physicians, and also as physician:population ratios.

TABLE 5

NUMBERS OF PHYSICIANS

	1980 Supply	1980 Target Requirements	Surplus (Shortage)
General Practice	19,219	18,535	684
Medical Specialties	9,368	9,322	46
Surgical Specialties	6,506	6,286	220
Laboratory Specialties	2,574	2,696	(122)
TOTAL	37,667	36,839	828

PHYSICIAN:POPULATION RATIOS

	1980 Supply	1980 Target Requirements	% Surplus (Shortage)
General Practice	1:1261	1:1307	3.7%
Medical Specialties	1:2587	1:2600	0.5%
Surgical Specialties	1:3725	1:3855	3.5%
Laboratory Specialties	1:9415	1:8989	(4.5%)
ALL PHYSICIANS	1:643	1:658	2.2%

The projected requirements for the year 2000 are assumed to increase from 1980 target requirements because of overall population growth. In addition, since the population will be proportionately more elderly (and given higher historic medical care utilization by the elderly), further adjustments have been made for the changing age-sex mix of the population. These adjustments are detailed in Appendix V.a. Another factor which may affect projected requirements is the proportion of female physicians in the workforce. Recent studies suggest that on average, over a lifetime, a female physician provides fewer medical services than her male counterpart. As females in Canadian medical schools now constitute 40% of the class, with a trend towards 50%, estimates of physician requirements established for 1980 have been increased accordingly. These adjustments are detailed in Appendix V. b. A further factor affecting projected requirements is Quebec's stated intention to increase their general practitioner stock by 2,495 over and above increases due to population growth by the year 2000.

It is evident on reviewing statistics on medical utilization in Canada (as measured by services provided by physicians under provincial medical care insurance plans) that there have been annual increases of per capita utilization of 3.3% per year from 1974/75 to 1982/83. Only about 0.5% per year could be explained by demographic changes and various explanations have been considered for this disproportionate increase in medical utilization: changing consumer expectations ("demand"), changing practitioner practice patterns, increasing numbers and availability of physicians, meeting physician income expectations, changing medical technology and wider range of diagnostic and therapeutic modalities. To the extent that the factors affecting utilization increases are unrelated to meeting patient needs, utilization increases may exacerbate current physician oversupply. It was beyond the scope of this study to quantify these, and other factors, affecting physician requirements (e.g. use of allied health professionals). However, the Federal-Provincial Advisory Committee was of the opinion that observed utilization does not necessarily represent the "need" for medical services. This is supported by fairly large inter-provincial differences in per capita utilization,

without apparent corresponding differences in health status. Further, it appears that utilization is correlated with the availability of physicians. It would therefore be circular reasoning to attempt to justify a need for additional physicians on the basis of utilization, which itself is influenced by the current or projected surplus of physicians. Accordingly, historical medical utilization increases were not incorporated in this report's projection of physician requirements.

With respect to changing medical technology, D.L. Martin (Consultant, Health Technology, Health and Welfare Canada) was asked to comment on the principal areas of change and likely impact on physician manpower requirements. On reviewing a number of emerging technologies (including computed tomography, immunological technologies, percutaneous transluminal angioplasty, digital radiography, transplants, ultrasound, endoscopy, microsurgery, etc.) he notes that while eventual developments in micro technique and immunological technology may lead to increased requirements in a limited number of specialties, changing medical technology will have overall little or no impact on physician manpower requirements.

The projected requirements in the year 2000, based on the adjustments discussed above, according to broad specialty groups are as follows (see Appendix V. c. for details):

TABLE 6

	1980 Target Requirements	2000 Target Requirements
General Practice	18,535	26,618
Medical Specialties	9,322	12,483
Surgical Specialties	6,286	8,219
Laboratory Specialties	2,696	3,621
TOTAL	36,839	50,941

Comparison of Projected Supply and Requirement

Assuming present trends and policies continue, by the year 2000, the

following situation expressed in numbers of physicians, and also as physician:population ratios would result:

TABLE 7

NUMBERS OF PHYSICIANS

	2000 Supply	2000 Requirements	Surplus (Shortage)
General Practice	31,488	26,618	4,870
Medical Specialties	14,978	12,483	2,495
Surgical Specialties	7,225	8,219	(994)
Laboratory Specialties	3,232	3,621	(389)
TOTAL	56,923	50,941	5,982

PHYSICIAN:POPULATION RATIOS

	2000 Supply	2000 Requirements	% Surplus (Shortage)
General Practice	1:912	1:1079	18%
Medical Specialties	1:1917	1:2301	20%
Surgical Specialties	1:3975	1:3494	(12%)
Laboratory Specialties	1:8886	1:7931	(11%)
ALL PHYSICIANS	1:505	1:564	12%

The target physician:population ratios for requirements in the year 2000 (Table 7) show more physicians required per capita than in 1980 (see Table 5). Overall for the year 2000 the target ratio is 1:564 compared to 1:658 in the year 1980. However, this higher number of physicians per capita, for the most part, does not reflect any increased intensity of servicing but rather recognizes that even with the same level of servicing for each age-sex grouping the changing age-sex mix of the population will require overall more physicians per <u>total</u> population. Similarly, the adjustment for female physician productivity results in an "enriched" target physician:population ratio, not as a reflection of increased intensity of servicing, but under an assumption that more physicians overall will be required to maintain a given level of service if there are relatively more female physicians in the overall stock.

There are a number of significant implications from the projection in Table 7. The 1980 overall surplus of 828 physicians is projected to increase to 5982. If one assumes a more or less steady annual change in physician stock, a surplus of 5982 suggests that annually over 300 physicians who are not "required" enter Canada's health care system. Conservatively estimating average annual income for a physician at $100,000 implies some $30 million annually paid directly to these physicians, (and excluding related laboratory costs, hospitalization costs, etc.). This amount is cumulative, so that by the year 2000, the amount in question is over $600 million annually (in 1980 dollars).

The projection also highlights the need to seriously examine the specialty distribution of physicians. The projected surplus is concentrated in General Practice and the Medical Specialties. Indeed, notwithstanding the overall projected surplus, there are projected shortages for Surgical and Laboratory specialties. Any policy options and recommendations must take into account the specialty-specific nature of the physician surplus (shortage) situation. Although not explicitly detailed in this report, specialty-specific adjustments within the broad specialty groupings have to be taken into consideration. It is worth repeating also that the overall Canadian physician supply/requirements picture (even if adjusted for specialty distribution) may mask inter and intraprovincial distributional problems. Clearly, the issues of physician supply, requirements, distribution and associated costs require ongoing study.

IT IS RECOMMENDED THAT THE FEDERAL AND PROVINCIAL GOVERNMENTS MAINTAIN AND IMPROVE THE NATIONAL PHYSICIAN MANPOWER DATA BASE BY CONSOLIDATING INDIVIDUAL PROVINCIAL DATA, WITH THE FEDERAL-PROVINCIAL ADVISORY COMMITTEE ON HEALTH MANPOWER TO CONTINUE AS A NATIONAL COORDINATING BODY ON PHYSICIAN MANPOWER. THERE SHOULD BE ADMINISTRATIVE AND RESEARCH STAFF SPECIFICALLY TO SUPPORT ONGOING STUDY OF PHYSICIAN MANPOWER (E.G. AS AFFECTED BY CHANGES IN HEALTH TECHNOLOGY).

IV. POLICY OPTIONS

In reviewing policy options, it is useful to keep in mind that:

(1) Certain assumptions used in the study may not be realized. There is an inherent uncertainty in any study of this type given data limitations and the impossibility of predicting future events with absolute confidence. Nevertheless, policy decisions do have to be made, and as in this study, reliance should be based on best estimates, with the understanding that annual reviews and updates will ensure that policy adjustments can be made if projections and/or assumptions deviate from estimations.

(2) The study does not address in detail issues relating to specialty-specific interprovincial and intraprovincial distribution of physicians. Such factors have to be taken into account in implementation of any national policies with regards to physician supply.

(3) There are public policy issues in physician manpower planning not directly related to requirements for physician services. For example, access of Canadians to medical careers may be considered important (although it would be probably cheaper to "import" physicians from other countries). There are aspects of research, academic quality, etc. affected by decisions on medical school and postgraduate training, yet which do not easily appear in the "number of physicians required" equations.

(4) Finally, and perhaps of most concern to governments, while the overall number of physicians is viewed as important, it is in the context of increasing health care costs and accessibility to medical services, including changes in mode of delivery. Neither of these two major concerns is addressed by looking only at numbers without regard to the distribution of physicians or payments to physicians.

Although theoretically there are policy options which could affect physician supply by encouraging or discouraging attrition (e.g. mandatory retirement), practically speaking the available policy options, which have an impact on physician supply, are related to the following areas:

(1) Physicians from abroad.
(2) Postgraduate training positions.
(3) Canadian medical school enrollment.
(4) Distribution/payments to physicians.

Each of these areas is discussed in turn below. The existing situation in Canada is reviewed, and the policy options available, along with their implications, are then presented.

Physicians From Abroad

Physicians entering Canada from abroad can be categorized as follows:

(1) Returning Physicians - physicians who have been in active practice in Canada may go abroad (to practise or to undertake further postgraduate training) and then return to Canada.

(2) Graduates of Canadian Medical Schools - Canadians who undertake their medical school education in Canada may decide to take all or part of their postgraduate training abroad, and then return to Canada. This category differs from (1) as these physicians have never been in active practice in Canada.

(3) Landed Immigrant Physicians - either "selected" on the basis of a demonstrated need which cannot be filled by a qualified Canadian physician; or as a sponsored relative/refugee. It is assumed that most, if not all, landed immigrant physicians are foreign medical graduates (FMG's).

(4) Canadian FMG's - Canadians who undertake their medical school education abroad can also be considered FMG's, although unlike (3) there is no hindrance to their returning to live in Canada, (although there may be limitations on their ability to practise).

(5) Physicians on Temporary Work Visas - the large majority of physicians on visas in Canada are undertaking postgraduate training; however, some are in Canada practising on work visas (e.g. in northern/rural areas). It is assumed that most, if not all, physicians on visas are FMG's.

The S.M.S. data regarding additions to stock cannot be directly translated into the above categorizations. For example, although Landed Immigrant physicians may be "New Entrants" (as defined in Appendix II.a.), the term "New Entrants" is not synonymous with Landed Immigrant Physicians since an immigrant physician may have been on a temporary visa in Canada before being granted "landed" status. As he/she was already in the system, S.M.S. would not count that physician as a "New Entrant", but as a "Returnee from Abroad". There are numerous other examples of difficulties of reconciling S.M.S. data into categories relevant to policy decisions. Fortunately, there are additional data available from Canada Employment and Immigration and the Association of Canadian Medical Colleges (ACMC) which can be used in analyzing the numbers of physicians entering Canada from abroad.

With respect to the above five categorizations, it is probably reasonable to assume that few, if any, restrictions can be placed on Canadian physicians, previously licensed in Canada, which would prevent them from returning to practise in Canada. However, as discussed in later sections of this report, they would be subject to whatever more general controls apply on physician distribution. Similarly, while it is informative to take the numbers of Canadian medical graduates returning to Canada into account in considering postgraduate training and medical school enrollment, it is probably reasonable to assume that few, if any, restrictions can be placed on their return and/or licensure in Canada.

The present discussion of policy options affecting physicians from abroad focuses therefore on immigration and foreign medical graduates. Data from Canada Employment and Immigration (see Appendix VI.a.) indicate that over the period 1979-82 there were on average 380 landed immigrant physicians/year entering Canada. Of these 138 were "selected", 242 were sponsored/refugee physicians. By the nature of the "selected" definition, it is reasonable to assume that most of the 138 "selected" physicians became licensed and active physicians in Canada. However, because of licensure regulations, it is unclear how many of the 242 sponsored/refugee physicians entered the active physician stock in Canada. An analysis was done therefore comparing the rosters of sponsored/refugee physicians with the S.M.S. roster of active physicians at later points in time (see Appendix VI.b.). It appears that on average, 50% or about 121 enter the S.M.S. roster, either directly or, more likely, after some Canadian postgraduate training. The total annual inflow into physician stock of landed immigrant physicians (selected and sponsored/refugee) is therefore estimated at about 259/year.

It is assumed that most, if not all landed immigrant physicians are FMG's. There are additionally Canadians who go abroad for their basic medical education and possibly postgraduate training, and then return to Canada (either directly into practice or into the Canadian postgraduate training system). There are no data available which can identify Canadian FMG's returning directly to practice. There are about 40 Canadian FMG's/year entering a first year post M.D. Canadian postgraduate training position, either internship or residency, (see Appendix VIIa.). Assuming that about half of these enter general practice, and the rest enter specialty training; and further assuming that annually some Canadian FMG's return from abroad to Canadian postgraduate training at more senior levels, it is estimated that in total about 55 new Canadian FMG's/year are added to stock from the Canadian postgraduate training system.

There have been on average, over the period 1980-82, 1111 physicians in Canada on temporary visas at any one time (see Appendix VIII for details). Most of these (928 on average) are undertaking postgraduate training in Canada, i.e. 183 physicians are on temporary visas in active practice. Canada Employment and Immigration data on visa extensions suggests that the large majority (80-90%) of these 183 physicians working on temporary visas are newly arrived in Canada. In other words, it is estimated that each year 160 physicians newly arrive to practice in Canada on temporary visas. Presumably, those physicians working on temporary visas who do not extend their visas either leave Canada, or change status to become landed immigrant physicians (either "selected" or "sponsored").

Possible options, affecting physicians coming to Canada from abroad, which would reduce the projected physician oversupply include: further tightening of "selected" physician immigration; recognizing only graduates of medical schools from selected countries for the purposes of licensure in Canada; requiring that physicians practising in Canada have completed a prescribed number of years of postgraduate training in Canada and reduction of the number of physicians practising on temporary work visas. The implementation of any options affecting immigration or visas would require the full cooperation and collaboration of the federal and provincial governments.

With regards to "selected" immigrant physicians, assuming there were effective means to better distribute physicians, it is not unreasonable to suggest that the number could be reduced from about 140 per year to approximately 50 per year. Such a reduction if implemented by 1986, would reduce projected supply 90/year x 15 years = 1350 physicians by the year 2000. Entry of immigrant physicians on a "selected" basis is predicated on an inability to find qualified Canadian physicians. Given effective measures to attract Canadians to under-serviced areas and specialties, it follows that fewer "selected" physicians will be needed. However, it is anticipated that annually there will still be entry of a

number of physicians on a "selected" basis in certain shortage specialties and to academic/research related positions. It is also worth noting that experience suggests that the impact of any changes in immigration policy does not become apparent until 18-24 months after a decision has been made.

IT IS RECOMMENDED THAT THE ANNUAL ENTRY OF "SELECTED" IMMIGRANT PHYSICIANS TO CANADA BE REDUCED FROM ABOUT 140/YEAR TO ABOUT 50/YEAR BY 1986.

Requirements for physician licensure are established by each province's College of Physicians and Surgeons or Medical Board, and while there are similarities across the various provinces, there is no one consistent, uniform set of licensing criteria for graduates of foreign medical schools. There is generally already a differentiation of registration criteria for physicians, depending on the location of medical school of graduation. For example, Ontario categorizes "Group A" and "Group B" medical schools. Group A schools are accredited schools in Canada, the U.K. (excluding the qualifications granted by the Conjoint Boards of Examiners of England or Scotland), Republic of Ireland, Australia, New Zealand, Republic of South Africa, and the United States. Group B schools are medical schools with a curriculum of not less than four academic years that have been providing courses in medicine continuously for a period of not less than ten years, that are listed by the World Health Organization and that are situated in a country other than referred to above. Holders of qualifications issued by the Conjoint Boards of Examiners of England or of Scotland are considered to be in Group B.

In Ontario, graduates holding a degree in medicine from a university or school of medicine in Group A are required to satisfactorily complete a one year preregistration training program approved by the College prior to being eligible for a General or Public Service class of licence. Graduates holding a degree in medicine from a university or school of medicine in Group B are required to satisfactorily complete two years of

preregistration training programs approved by the College prior to being eligible for a General or a Public Service class of licence, one of which must be a continuous year of rotating internship in an approved training program and one of the two years must be taken in Canada. The second year of approved training can be a rotating or mixed or straight internship or residency. The approved preregistration programs are those in Group A countries.

British Columbia has similar regulations, although referring to Category I and Category II medical schools rather than Group A and B. The College of Physicians and Surgeons of B.C. has indicated that effective 1986, only graduates of Category I medical schools will be eligible for licensure. Quebec's regulations differ somewhat in that they require foreign medical graduates to have done a rotating internship in either Canada or the United States for licensure. Also, medical schools in Quebec may require an additional year of pre-internship.

There are other licensure regulations for foreign trained physicians concerning examinations, specialty recognition, special/temporary registration, etc. that vary from province to province. The key point is that there are already mechanisms in place that inhibit to some extent physicians educated abroad establishing in Canada and it may be possible to enhance these mechanisms. Such measures would affect mainly those FMG physicians already in Canada, who have not yet been able to obtain the required postgraduate training for licensure, and sponsored relative/refugee physicians coming to Canada. To a lesser degree, these measures would also impact upon Canadians going abroad for their medical training (especially to the so-called "off-shore" medical schools). In other words, more stringent restrictions of licensure of FMG's will likely lead to an increasing number of Canadians (citizens and landed immigrants) who will have had medical training, and possibly even have practised abroad, who will be unable to pursue their professional careers in Canada. The legal and constitutional implications of any such policies would require careful consideration. If more stringent restrictions on licensures of FMG's were introduced, there would be a

reduction in the number (estimated at 121 sponsored/refugee physicians and 55 Canadian FMG's) of FMG's entering active Canadian stock annually. Available data do not allow a definitive estimate, but a reduction of addition to physician stock from this source from 176/year to 115/year effective 1990 (to allow those in the system currently to complete their program) appears a feasible target. Such a reduction would reduce projected supply by about 60/year x 11 years = 660 physicians by the year 2000.

IT IS RECOMMENDED THAT THE ANNUAL ADDITION TO CANADIAN PHYSICIAN STOCK FROM PHYSICIANS TRAINED ABROAD, (i.e. FOREIGN MEDICAL GRADUATES, INCLUDING CANADIAN CITIZENS), EXCLUSIVE OF THOSE "SELECTED" IMMIGRANT PHYSICIANS, BE REDUCED FROM ABOUT 176/YEAR TO ABOUT 115/YEAR BY 1990.

The annual entry to Canada of physicians on temporary work visas to practise (i.e. not to do postgraduate training) is important insofar as there is any net change of physicians working on these visas over time. In other words, if there are about 175-200 visa physicians working in Canada (at any one time), with an annual inflow balanced by an outflow of about the same number, completely stemming the inflow of temporary visa physicians would at maximum decrease physician supply by only 200 physicians from physician supply projections detailed in Table 3; a 50% reduction would reduce supply by about 100 physicians. There appears, however, to have been a recent increase in the number of physicians practising in Canada on temporary visas (see Appendix VIII) and clearly this could lead to a net addition to physician stock. Again assuming mechanisms to more effectively distribute physician manpower are implemented, it is not unreasonable to suggest that the number of physicians practising in Canada on temporary visas be reduced. An important factor to recognize is that physicians can proceed from a temporary work visa status to becoming "selected" physician immigrants. Practically it becomes fairly difficult to deny landed status to physicians who have worked in a community on a temporary visa for one or more years. Therefore, limiting the number of selected physicians implies also limiting physicians on visas.

IT IS RECOMMENDED THAT THE NUMBER OF PHYSICIANS PRACTISING IN CANADA ON TEMPORARY VISAS BE REDUCED BY AT LEAST 50% (FROM ABOUT 200 TO 100) BY THE YEAR 2000.

Postgraduate Training Positions

The 1982/83 number of postgraduate positions in Canada, by broad specialty grouping and province, is listed below. The figures include both government and non-government funded positions. Mechanisms for funding and allocating postgraduate positions vary from province to province.

TABLE 8

Province	Total	General* Practice	Medical** Specialty	Surgical Specialty	Laboratory** Specialty
B.C.	436	105	186	95	50
Alberta	683***	213	281	130	57
Saskatchewan	198	85	67	31	15
Manitoba	361	106	167	67	21
Ontario	3051	697	1418	641	295
Quebec	2037	584	842	455	156
Nova Scotia	376	129	135	82	30
Newfoundland	190	76	63	33	18
TOTALS	7332	1995	3159	1534	642

* Includes family medicine, rotating/mixed internes, 11 physicians doing 2nd year prelicensure, and 11 physicians doing "upgrading".

** Specialty groupings as defined earlier in this report (p. 5). Data for this table are taken from Table 6 of "Survey of Post-MD Clinical Trainees (Internes and Residents) January 1, 1983" by ACMC Research Division. There is a slight adjustment from that table inasmuch as Radiology (therapeutic, diagnostic), Radiation Oncology, and Nuclear Medicine are grouped in this report as Laboratory Specialties.

*** Includes 2 trainees at the University of Calgary in the Nepal Exchange Programme.

Of these 7332 trainees, there were 900 trainees on temporary work visas (the average number 1980-82 was 928). It is worth noting that many of those on temporary work visas intend to stay in Canada to practise. This may be through working in Canada on a temporary work visa, or achieving landed immigrant status as a selected or sponsored relative (e.g. marries a Canadian). Because of the nature of the S.M.S. data system, the "output from Canadian training programs" referred to earlier in this report (see Appendix II.b.) includes these visa trainees who enter the active physician stock. Because of definitional differences, reconciliation of S.M.S. data and A.C.M.A. data on postgraduate trainess is not easily done. Data on the number of Canadian medical graduates and foreign medical graduates (exclusive of visa trainees) entering first year post MD training in Canada are available from A.C.M.C. (see Appendix VII.a. and VII.b.), and it is estimated that there are on average:

TABLE 9

Canadian Medical Graduates	1680
Foreign Medical Graduates	
Canadian citizens	40
Landed Immigrants	125

Relating the number of 1st year entrants to postgraduate training (or the number of positions) to output from the training programs into active physician stock in Canada is complicated by the effect of visa trainees entering active stock, as well as variation in length of specialty programs, switching from one program to another, movement of trainees into and outside Canada, etc. This report therefore <u>does not</u> attempt to project precise numbers of postgraduate training positions needed, but rather focuses upon needed net % reductions in output from training programs. As a first approximation, there would be a corresponding % reduction in number of postgraduate positions, but the detailed reduction would require more extensive study.

Possible reductions of physician supply through more stringent regulations on FMG's, including those in postgraduate training, was discussed in the previous section. With respect to intake into Canadian postgraduate training from Canadian medical schools, any reductions in overall postgraduate positions would have to take into account those medical students presently in the system. If reductions in medical school enrollment were initiated for September 1985, the postgraduate system would continue to have existing levels of intake from Canadian schools until 1989.

Conversely, any efforts to increase physician supply (in surgical and laboratory specialties) would show impact on physician stock beginning only 1989+, since even if surgical and laboratory residency positions were increased in 1985, the additional positions would only be at entry level and would require four or more years to work through the system.

Relying on changes in postgraduate training positions alone to forestall a projected shortage of surgical specialists (994) and laboratory specialists (389) by the year 2000 (as shown in Table 7) requires approximately 125 per year additional output in these specialties over the period 1990-2000.

If this 125/year output were to be switched from General Practice (and/or Medical Specialties) to Surgical and Laboratory Specialties instead, then the projected General Practitioner and Medical Specialist oversupply would be mitigated while at the same time addressing projected Surgical and Laboratory Specialty shortages. There would be a reduction in overall physician supply of about 125/year for the approximately four year period of the Surgical/Laboratory residency (i.e. about 500 physicians) after which any reduction in General Practice output would be balanced by additional output from Surgical and Laboratory postgraduate training programs. It should be noted that there may or may not be a corresponding reduction in internship positions, since medical school graduates may still elect (or be required by licensure or specialty certification rules) to obtain their internship prior to entering specialty training.

IT IS RECOMMENDED THAT BY 1986, THE ANNUAL OUTPUT FROM CANADIAN PG TRAINING INTO GENERAL PRACTICE BE REDUCED BY 125/YEAR, AND CONCURRENTLY THAT THERE BE AN INCREASE IN SURGICAL AND LABORATORY PG TRAINING POSITIONS TO PROVIDE FOR A CORRESPONDING INCREASE IN OUTPUT FROM THOSE SPECIALTIES.

Assuming that there were 125 physicians per year fewer entering General Practice from Canadian postgraduate training, effective in the year 1986, then by the year 2000 the projected GP supply would be reduced by 1875 physicians. There would still be a projected national surplus of 2995 General Practitioners and 2495 Medical Specialists in the year 2000, (see Table 7, page 12).

If those already in the postgraduate training system are allowed to complete their training, further reductions in General Practitioner and Medical Specialist output must be preceded by corresponding reductions in intake to the postgraduate training system. More stringent regulations on foreign medical graduates effective 1985/86 would result in reductions in GP output commencing 1987/88, and reductions in Medical Specialist output in 1990/91. Canadian medical school enrollment reductions effective 1985 would on average result in reduced intake into the Canadian postgraduate training system in 1989, and corresponding reductions in General Practitioner output in 1990/91, and Medical Specialist output in 1994/95+. Given these timeframes, and the fact that the large majority of the output from Canadian PG training into active stock arises from Canadian medical school graduates, it is apparent that there is only a relatively limited period (about 10 years for General Practitioners, and 7 years for Medical Specialties) in which to remedy the projected surplus if a balanced situation is to be achieved by the year 2000. In other words, even assuming an annual reduction from projected supply of 125 GP's/year effective 1986, the projected output of GP's from Canadian PG training into active stock would still have to be reduced further by some 300 per year; and of Medical Specialists by some 355 per year over the period 1991-2000, and 1994-2000 respectively. Of course, other combinations of reductions would also be possible. For

example, assuming that some of the projected shortfall in surgical and laboratory specialties was met by residents, who otherwise would have entered medical specialties, results in a larger reduction required for General Practitioner output since there will no longer be 125/year assumed to have switched to surgical and laboratory specialties. These rather severe reductions result from attempting to rectify over a limited time a projected surplus that has developed over a much longer period of time. Alternatively, lesser reductions spread out over more years could be considered. Assuming that the output into stock from PG training, of general practitioners will be reduced by 125/year, effective 1985, through encouraging trainees to enter Surgical and Laboratory Specialties rather than General/Family Practice (i.e. GP output is 910/year)*, and assuming that the projected output from PG training for Medical Specialists is about 550/year*, the impact to the year 2000 of 10%, 20% and 30% reductions in postgraduate output is shown below in Table 10.

TABLE 10

REDUCTION IN #'s OF MD's BY YEAR 2000*

% Reduction in PG Output	General Practitioners (1991-2000)	Medical Specialists (1994-2000)	Total (GP + Med. Spec.)
10%	910	385	1295
20%	1820	770	2590
30%	2730	1155	3885

* See Appendix II.b. According to S.M.S. data, the annual output directly from Canadian PG training to active stock is 1037 General Practitioners. Allowing for the 125/year reduction in 1985/86, results in an output of about 910/year. The output directly from Canadian PG training of medical specialists is 499/year, but it is assumed that a number of the "returnees from abroad" are also "output" from Canadian PG training, albeit after doing part of their training abroad, and it is estimated that the annual output into active stock is about 550/year. It is also assumed that the effective date of reductions to projected supply for GP's is 1991 and for Medical Specialists 1994, i.e. annual reductions 1991-2000 for GP's and 1994-2000 for Medical Specialists. Thus, for example, a 20% reduction in Medical Specialist output would be (110 fewer physicians x 7 years = 770) by the year 2000.

Table 10 indicates that with a 20% reduction in output from postgraduate training of General Practitioners and Medical Specialists effective 1991 and 1994 respectively, (which would require reductions in medical school enrollment in 1985 and postgraduate training positions in 1989/90), there would be in total a reduction of about 2,590 physicians from the supply projections of Table 3, (page 8). As shown in Table 12 (page 38), even assuming that the recommendations concerning physicians from abroad were completely successful; and that reductions of General Practitioner stock by increasing Surgical and Laboratory Specialty output was implemented without complication in 1986; this 20% reduction in output from Canadian postgraduate training still leaves a projected physician surplus in the year 2000.

The advantages of reducing residency positions include lower training costs: directly through reduced salaries for interns and residents, and indirectly through reducing costs of teaching hospitals. There are also downstream savings from reducing the number of physicians entering the system. The disadvantages include possible adverse effects on training, research and medical undergraduate education. Service currently provided by salaried residents may have to be provided through fee-for-service specialists. However, it was felt that this factor did not necesitate adjustment of target physician requirements given the uncertainty of the net service contribution of interns/residents after allowing for teaching and supervision time spent by other physicians.

IT IS RECOMMENDED THAT, BY 1991, THERE BE A 20% REDUCTION IN OUTPUT FROM CANADIAN PG TRAINING TO GENERAL PRACTICE STOCK. (THIS IS ADDITIONAL TO THE 125/YEAR REDUCTION EFFECTIVE 1986).

IT IS RECOMMENDED THAT, BY 1994, THERE BE A 20% REDUCTION IN OUTPUT FROM CANADIAN PG TRAINING TO MEDICAL SPECIALTIES STOCK. (THIS NECESSITATES A REDUCTION IN MEDICAL SPECIALTIES POSTGRADUATE TRAINING POSITIONS EFFECTIVE 1990.)

IT IS RECOMMENDED THAT THE SPECIALTY-SPECIFIC NUMBER OF POSTGRADUATE TRAINING POSITIONS BE RATIONALIZED, INCLUDING CONSIDERATION OF REGIONALIZING SELECTED PROGRAMS IN ACCORDANCE WITH PRESENT AND PROJECTED SHORTAGES (OR SURPLUSES).

As noted earlier, there are a number of physicians in Canada doing postgraduate training on temporary work visas. Current statistics indicate these comprise 10-15% of training programs, and it is claimed that many of these positions in less popular specialties (e.g. psychiatry, neonatology) could not be filled with Canadian graduates. The concept of having some foreign medical graduates in Canadian residency programs is probably a good one. The exchange of backgrounds and training benefits both Canadian trainees and the residents on temporary work visas. Moreover, Canadian graduates benefit by going abroad for specialty training and some reciprocal arrangements making Canadian positions available are expected. If the visa trainees do their PG training in Canada, but then return abroad, the net impact on physician stock in Canada is slight. However, it appears that at least some eventually establish in Canada. (There is also of course the issue of the appropriateness of government funding for the salaries of visa trainees although this is not directly related to the present discussion of physician supply.) From the viewpoint of physician manpower planning, it would be more reasonable to rationalize postgraduate training so that Canadian medical graduates were encouraged to distribute themselves among available postgraduate positions in accordance with Canada's need for specialists and to ensure (as in the U.S.) that residents on visas return to a job in their country of origin.

IT IS RECOMMENDED THAT THE RELEVANT FEDERAL AND PROVINCIAL STAFF EXPLORE MECHANISMS FOR ENSURING THAT VISA TRAINEESS RETURN TO THEIR COUNTRY OF ORIGIN.

If, as is recommended in this report, reductions in the postgraduate training establishment are implemented, it may be appropriate to make surplus positions available on a cost recovery basis for the training of foreign medical graduates providing there are firm commitments to return to their countries of origin. This measure may assist in maintaining medical education program viability, international training responsibilities and reciprocal arrangements, and meeting service needs within teaching hospitals.

Canadian Medical School Enrollment

Current (1983/84) Canadian medical school entry size is 1887 positions distributed among the provinces as follows:

TABLE 11

British Columbia	130
Alberta	192
Saskatchewan	60
Manitoba	99
Ontario	615
Quebec	633
Nova Scotia	102
Newfoundland	56
TOTAL	1887

The "official" entry class is somewhat less (1868 students) as the actual enrollment may include students repeating first year, returnees, etc.

There is some attrition from programs and also some medical graduates go abroad for their postgraduate training. It is estimated that about 95% of entrants graduate and of these Canadian medical graduates, 95% take their first year post MD in Canadian postgraduate training.

Reduction of Canadian medical school enrollment does not directly and immediately impact upon the physician supply in Canada since no medical school graduates go directly into practice. They must first complete one or more years of postgraduate training. However, proposed reductions in output from postgraduate training programs imply some corresponding reduction in medical school enrollment or the country would be churning out MD's (at considerable expense) unable to practise in Canada. And in fact, given the lead time required, reductions in medical school enrollment would have to precede cutbacks in postgraduate training positions by 4-5 years.

If a 20% reduction in overall postgraduate training output were considered, then, as a first approximation one might consider a corresponding reduction to medical school enrollment of about 20%. However, since the proposed reductions are specific to output from General Practice and Medical Specialists postgraduate training, the corresponding medical school enrollment reduction is somewhat less. Focussing on General Practice and Medical Specialists (see page 26), one can assume that about 292 fewer physicians are projected to enter postgraduate training in 1989-90 in order to result in the 182/year reduction in General Practice output effective 1991 and the 110/year reduction in Medical Specialists output effective 1994. As the reduction in foreign medical graduates (who have gone through Canadian postgraduate training) entering active physician stock are already taken into account in estimating the cumulative impact of this report's recommendations (see table 12, page 38), the reduction of intake to postgraduate training of these 292 physicians is assumed to result from medical school enrollment reduction effective 1985-86. Further assuming that about 95% of the medical entry class graduates, this means that the entry class should be reduced by about 307 positions. In turn, this represents about 17% of the 1984-85 Canadian medical schools entry.

The advantages of reducing Canadian medical school enrollment include reduced direct education costs and reduced indirect costs associated with teaching hospitals. However, the downstream reduction of physician output is the more significant result. The disadvantages include reduced educational opportunity for Canadians seeking medical careers and possible adverse impact on teaching, research and quality of medical care. Depending on the approach adopted in reducing medical school class size, there may be reduced flexibility in adjusting class sizes for future unanticipated needs, e.g., if one medical school were closed entirely. However, there is currently, and will likely continue to be, physicians from other parts of the world who would like to establish in Canada. It is therefore unlikely that even with a reduction in medical class size, that unanticipated Canadian needs could not be met in the short-run by adjustments to immigration policy.

Although it would be possible to phase in a reduction in medical school enrollment over a number of years, the importance of fairly immediate action to reduce Canadian medical school enrollment must be emphasized. Each year of delay adds to the cumulative surplus of physician supply and makes it that much more difficult to achieve an eventual balance of supply and requirements.

IT IS RECOMMENDED THAT CANADIAN MEDICAL SCHOOL ENROLLMENT (ENTRY CLASS) BE REDUCED 17%, EFFECTIVE 1985. (ALTERNATIVELY, REDUCTIONS COULD BE PHASED IN OVER A THREE YEAR PERIOD. ADJUSTMENTS TO POSTGRADUATE TRAINING WOULD THEN ALSO HAVE TO BE PHASED IN OVER A THREE YEAR PERIOD.)

If measures to limit FMG's and landed immigrants are not implemented, then the medical school enrollment reduction would have to be more severe in order to achieve the same PG output reduction.

A number of factors should be considered in planning for a national reduction in medical school enrollment: provincial physician:population ratios; provincial medical school enrollment/population ratios; language

factors; "critical mass" for smaller medical schools; etc. It is recognized also that those provinces with a number of medical schools may find it more difficult to coordinate an enrollment reduction by September 1985. Possible options to implement reductions would include: across-the-board reduction, closure of one or more schools entirely, reduction of class size according to current provincial surplus/shortages, reduction in class size according to current per capita medical class places, etc.

Distribution and Payments to Physicians

Dealing with overall Canadian supply and requirement figures does not address interprovincial and intraprovincial problems of physician distribution. There are substantial differences in physician/population ratios across provinces, and within each province there are rural and northern areas that have far fewer physicians per capita than the urban regions. While recognizing that urban areas serve as secondary and tertiary referral centres, it would appear that the urban/rural differences for general practice and many of the specialties (e.g. psychiatry) cannot be explained solely on the basis of referral patterns. Planning training program requirements on a national basis requires inter-provincial and national cooperation in consolidating and regionalizing certain specialty programs, and as importantly, it requires measures to ensure the efficient distribution of medical manpower. Possible measures to accomplish this include providing information/education/support/incentives to encourage physicians establishing in under-serviced areas; fee-schedule adjustments for different geographic regions (e.g. Quebec); control on physician ability to bill the provincial medical insurance plan (e.g. B.C.); etc.

Government's concern about physician oversupply is prompted in large measure by their funding responsibility for medical services. It is therefore important to appreciate what options are available to control medical costs (a product of utilization x per unit cost), noting that

physician supply is only one of a number of factors affecting medical costs. Measures undertaken or under discussion by various provinces include: setting a "global cap" by placing a ceiling on total medical expenditures, graduated fee-schedules, limits on procedures, patient/professional awareness programs, more active "patterns of practice" committees, etc.

This study was not explicitly asked to consider details to improve physician distribution, (both specialty distribution and geographic distribution) or control medical costs. However, inasmuch as the requirements for medical manpower are significantly impacted by these two factors, a number of options were mentioned. Unless effective measures are undertaken to address issues of distribution and costs, the recommendations in this report relating to physician supply will be exceedingly difficult to implement. For example, if effective measures to better distribute Canadian physicians are not implemented, there will continue to be "underserviced areas" to which immigrant physicians will apply, making limitation of physician immigration much more difficult. If interprovincial disparities in physician manpower supply are not addressed, provinces with shortages may be reluctant to reduce their medical school enrollment and postgraduate training output--even if many of their graduates do not in fact remain to practise in the province.

IT IS RECOMMENDED THAT EFFECTIVE MEASURES BE ADOPTED TO ENSURE PHYSICIANS ESTABLISH ONLY IN AREAS OF DEMONSTRATED NEED FOR MEDICAL SERVICES.

V. SUMMARY OF RECOMMENDATIONS

After reviewing policy options, various assumptions used in projections of physician supply and requirements, and with due regard to the risks of overestimation or underestimation, the Federal-Provincial Advisory Committee on Health Manpower has formulated a set of policy recommendations which appear to most appropriately address present and projected medical manpower requirements in Canada. These recommendations have been presented in the discussion of Section IV. However, each recommendation is made in the context of the full set of recommendations; taking one or two alone, without recognizing the linkages among the recommendations, would thus be inappropriate. They provide the basis for an integrated national management plan for physician manpower. There is a general recommendation with respect to a national data base and ongoing study, and ten other recommendations in four policy areas:

- Physicians from Abroad
- Postgraduate Training Positions
- Canadian Medical School Enrollment
- Distribution/Payments to Physicians

The recommendations do not detail strategies for implementation. Possible strategies were discussed in the body of this report. However, the Committee felt that further input from other groups (e.g. provincial medical associations and colleges/medical boards, medical schools, etc.) was essential before deciding on the best approaches. For example, there are already in a number of provinces planned reductions in medical school enrollment, and implementation of the recommendations listed below clearly have to take such policies and measures into consideration. Table 12 summarizing the impact on physician supply of these recommendations is provided on page 38. Inasmuch as some of the recommendations have fairly tight timeframes, an outline to develop specific implementation strategies has been prepared, and is attached as Appendix IX for consideration by the Conference of Deputy Ministers should this Report and its recommendations be approved in principle.

Recommendation 1 (Page 13):

That the federal and provincial governments maintain and improve the national physician manpower data base by consolidating individual provincial data, with the Federal-Provincial Advisory Committee on Health Manpower to continue as a national coordinating body on physician manpower. There should be administrative and research staff specifically to support ongoing study of medical manpower (e.g. as affected by changes in health technology).

Recommendation 2 (Page 19):

That the annual entry of "selected" immigrant physicians to Canada be reduced from about 140/year to about 50/year by 1986.

Recommendation 3 (Page 21):

That the annual addition to Canadian physician stock from physicians trained abroad (i.e. foreign medical graduates including Canadian citizens), exclusive of those "selected" immigrant physicians, be reduced from about 176/year to about 115/year by 1990.

Recommendation 4 (Page 22):

That the number of physicians practising in Canada on temporary visas be reduced by at least 50% (from about 200 to 100) by the year 2000.

Recommendation 5 (Page 25):

That by 1986 the annual output from Canadian postgraduate training into General Practice be reduced by 125/year, and concurrently that there be an increase in Surgical and Laboratory postgraduate training positions to provide for a corresponding increase in output from those specialties.

Recommendation 6 (Page 27):

That by 1991 there be a 20% reduction in output from Canadian postgraduate training to General Practice stock. (This is additional to the 125/year reduction effective 1986.)

Recommendation 7 (Page 27):

That by 1994 there be a 20% reduction in output from Canadian postgraduate training to Medical Specialties stock. (This necessitates a reduction in medical specialties postgraduate training positions effective 1990.)

Recommendation 8 (Page 28):

That the specialty-specific number of postgraduate training positions be rationalized, including consideration of regionalizing selected programs in accordance with present and projected shortages (or surpluses).

Recommendation 9 (Page 28):

That relevant federal and provincial staff explore mechanisms for ensuring that visa trainees return to their country of origin.

Recommendation 10 (Page 31):

That Canadian medical school enrollment (entry class) be reduced 17% effective 1985. (Alternatively, reductions could be phased in over a three year period. Adjustments to postgraduate training would then also have to be phased in over a three year period.)

Recommendation 11 (Page 33):

That effective measures be adopted to ensure physicians establish only in areas of demonstrated need for medical services.

CUMULATIVE IMPACT OF IMPLEMENTING RECOMMENDATIONS ON PROJECTED CANADIAN PHYSICIAN SUPPLY

	1980	1990	2000
I. Projected Continuation of Present Trends/Policies	37,667	48,819	56,923
II. Impact of Recommendations*			
1. Maintain and improve physican data base			
2. Reduce entry of "selected" immigrant physicians (refer p. 18)		-450	-1350
3. Reduce FMG's licensed in Canada		- 60	- 660
4. Reduce number of temporary visa physicians in practice (p. 21)			- 100
5. Switch GP's to Surgical/ Laboratory Specialties (p. 24)		-500	- 500
6. Reduce GP output from Canadian PG training (20%) (p. 26)			-1820
7. Reduce Medical Specialist Output from Canadian PG Training (20%) (p. 26)			- 770
8. Rationalize PG Training Programs			
9. Visa Trainees to return to home country			
10. Reduce Canadian Medical School Enrollment (17%)			
11. Adopt effective measures to better distribute physicians			
TOTAL IMPACT OF RECOMMENDATIONS		-1,010	-5,200
III. Projected Supply if All Recommendations are Implemented		47,809	51,723
IV. Projected Requirements in the Year 2000**			50,941

* Some recommendations do not have a direct and immediate impact on physician supply, but are essential to the implementation of the recommendations that do impact on supply (e.g. medical school enrollment reduction is a necessary step preceding reduction in output from Canadian PG training).

** It is of interest to note that even if all the recommendations are 100% successful, there is still a projected surplus in the year 2000.

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APPENDIX I

Physician Supply in Canada - December 1980

(Derived from S.M.S. Data, with amendments based on additional information from individual Provinces)

	CAN.	B.C.	ALTA.	SASK.	MAN.	ONT.	QUE.	N.B.	N.S.	PEI	NFLD.	NWT	YUKON
GENERAL/FAMILY PRACTICE	19,219	2591	1489	800	797	6980	4884	395	700	91	436	30	26
MEDICAL SPECIALTIES													
- Internal Medicine	3,397	339	234	81	162	1221	1150	47	95	10	55	3	0
- Dermatology	309	42	14	3	9	126	109	1	4	0	1	0	0
- Neurology	332	40	19	9	9	98	139	4	10	0	4	0	0
- Paediatrics	1,353	154	100	41	74	502	394	19	38	2	29	0	0
- Physical Medicine	152	14	10	4	5	58	51	3	6	1	1	0	0
- Psychiatry	2,171	258	113	33	83	918	656	24	61	5	19	1	0
- Public Health	159	33	9	1	1	26	70	3	5	0	11	0	0
- Anaesthesia	1,495	218	118	32	64	555	427	29	40	4	18	0	0
Subtotals	9,368	1098	617	204	397	3504	2996	130	258	22	138	4	0
SURGICAL SPECIALTIES													
- General Surgery	2,106	253	154	70	94	741	600	57	84	10	29	3	1
- Cardio/Thoracic	163	17	13	7	8	46	60	1	8	0	3	0	0
- Neurosurgery	161	21	16	6	5	50	50	6	5	0	2	0	0
- Obstetrics/Gynaecology	1,342	132	102	28	60	537	394	29	36	7	15	1	1
- Ophthalmology	822	133	57	22	29	297	227	16	31	3	6	1	0
- Otolaryngology	508	57	26	10	20	192	166	13	18	1	5	0	0
- Orthopaedic Surgery	747	106	63	23	30	238	244	20	11	2	10	0	0
- Plastic Surgery	229	26	18	8	6	82	76	7	3	1	2	0	0
- Urology	428	69	27	14	17	152	118	17	16	2	6	0	0
Subtotals	6,506	804	476	188	269	2335	1935	166	222	26	78	5	2
LABORATORY SPECIALTIES													
- Nuclear Medicine	85	4	3	2	1	36	36	1	1	0	1	0	0
- Medical Biochemistry	59	6	3	1	2	16	29	0	1	0	1	0	0
- Medical Microbiology	131	9	8	2	3	36	67	0	6	0	0	0	0
- Pathology	810	101	74	19	34	299	222	14	29	2	16	0	0
- Diagnostic Radiology	1,338	183	103	40	45	472	387	30	49	5	24	0	0
- Radiation Oncology	126	16	19	2	6	50	22	4	5	1	1	0	0
- Medical Scientists	25	5	0	1	1	10	6	0	1	0	1	0	0
Subtotals	2,574	324	210	67	92	919	769	49	92	8	44	0	0
ALL PHYSICIANS	37,667	4817	2792	1259	1555	13,738	10,584	740	1272	147	696	39	28

The Physician Record File Utilized by the Department of National Health and Welfare

Background

The Medical Section, Circulation Department, Southam Communications, Limited (MSCD-SC), Scarborough, Ontario, maintains a physician card file and a physician computer tape file, both of which are utilized primarily for commercial mailing purposes. A copy of the computer tape is purchased four times per year by the Department of National Health and Welfare through arrangements with Sales/Marketing Systems, a division of Southam Communications, Limited. The tapes serve as (a) a convenient, updated name and address file for departmental mailing to physicians, and as (b) a source of statistical data.

Nature and Types of Information Collected by the MSCD-SC System

The MSCD-SC maintains a card file of practically every physician in Canada. The minimum information on a card is the physician's name. When additional data are obtained, the MSCD-SC staff produce a computer record, a combination of descriptive data (name and address), and coded data. As of December 31, 1981 that coded data include:

- Province, county and municipality of residence.

- Type of physician (general practitioner, specialist, intern, resident).

- Up to four certificated specialties. Certification by the Royal College of Physicians and Surgeons or La Corporation professionnelle des médecins du Québec constitutes the basis of acceptance of specialty status. "Family Physicians" are those certificated by the College of Family Physicians of Canada, and are included with

APPENDIX II.a. (continued)

"General Practitioners" for statistical purposes. Physicians who are "Medical Scientists" are not necessarily certificated in any clinical specialty, and are a special group included with certificated specialists for statistical purposes.

- Primary interest.
  This is the specialty, indicated by the physician, where he spends the majority of his time, although he is not certificated in the specialty.

- Appointment (part-time or full-time) - (no appointment, medical research, teacher in a medical faculty, government administration, business or industry administration, staff physician at a hospital, medical director of a pharmaceutical company).

- University or country of graduation (Canadian universities are specified).

- Year of graduation.

- Activity status (active, removed, deceased, abroad, retired, military, not-in-private-practice).

- Registration status (registered or not registered).

- The hospital of affiliation (recent coded item).

- Physician identification number.
  Prior to 1972, some physicians were assigned temporary numbers, but this is no longer true, according to the MSCD-SC staff. Assigned numbers are permanent, and unique.

Procedures for obtaining, verifying and recording physician information

The MSCD-SC staff rely on multiple sources for obtaining basic information. A staff of six persons is employed in file maintenance and up-dating, which occurs weekly. Sources include:

- Provincial registrars.
- Hospitals.
- Medical Schools, for names of graduating classes.
- The Royal College of Physicians and Surgeons of Canada.
- La Corporation professionnelle des médecins du Québec.
- The College of Family Physicians of Canada.
- The Medical Council of Canada.
- The provincial medical associations.
- Departments of Health.
- Pharmaceutical companies, and their representatives who visit physicians.
- Letters from the physicians themselves.
  The annual questionnaire sent out by the Canadian Medical Directory (CMD). It has been pointed out by the CMD that the majority of physicians do not change their situation from one year to the next and therefore do not fill out and return the questionnaire each year or else reply "No change." (Note: The record of a physician as published in the Canadian Medical Directory is not necessarily identical to his latest computer tape record.)

- A "check letter" which consists of a questionnaire sent out by MSCD-SC to a physician if further information is desired or if only his name and address are know. This is sometimes referred to as the "Modern Medicine of Canada" questionnaire.

- City directories, telephone directories, newspapers, and journals provide clues to changes which may require a follow-up "check letter". Phone calls to physicians are also utilized (but restricted, in general, to the Toronto area).

APPENDIX II.a. (continued)

Using the SMS data base, the following categories of physicians and physician flows used in this report can be defined:

Direct from Canadian Postgraduate Training - active civilian physicians in Canada who the previous year were included in SMS as being in postgraduate training in Canada. Additionally, active civilian physicians who change from General Practitioner to a specialty or from one specialty to another (compared to the previous year) are assumed to have come from Canadian postgraduate training.

Returnees from Abroad - active civilian physicians in Canada who the previous year were classified in SMS as outside Canada and who had previously been recorded in the SMS files as being in Canada, either as practising physicians or in postgraduate training.

New Entrants - active civilian physicians in Canada who have never previously been recorded in the SMS files.

Movement Abroad - physicians who are recorded by SMS as leaving Canada, and who were previously active civilian physicians in Canada are deemed to have "moved abroad". Note that movement of postgraduate trainees abroad is not counted in "movement abroad".

Return to Postgraduate Training - physicians who are recorded by SMS as in Canadian postgraduate training, and who were the previous year an active civilian physician, are deemed to have "returned to postgraduate training". Additionally, active civilian specialists who the previous year were recorded as General Practitioners are assumed to have returned to postgraduate training at some earlier point; and active civilian specialists who the previous year were recorded as a different specialty are assumed to have returned to postgraduate training at some earlier point.

APPENDIX II.b.

Estimated Annual Average (1979-1982) Gross Inflow of Physicians Into Stock by Certificated Specialty, Canada

	Directly from Canadian PG Training		Returnees from Abroad		New Entrants		Total	
GENERAL/FAMILY PRACTICE		1,037.1*		95.0		228.3		1,360.4
MEDICAL SPECIALTIES								
-Internal Medicine	210.9		45.0		22.5		278.4	
-Dermatology	13.3		2.0		0.3		15.6	
-Neurology	16.3		4.7		1.3		22.3	
-Paediatrics	64.2		11.8		10.6		86.6	
-Physical Medicine	10.0		0.5		1.8		12.3	
-Psychiatry	102.2		14.5		21.0		137.7	
-Public Health	18.0		2.0		0.7		20.7	
-Anaesthesia	64.5		5.5		10.0		80.0	
SUBTOTALS-		499.4		86.0		68.2		653.6
SURGICAL SPECIALTIES								
-General Surgery	50.0		16.3		4.0		70.3	
-Cardiovascular & Thoracic	12.5		1.8		1.2		15.5	
-Neurosurgery	4.8		1.0		2.0		7.8	
-Obstetrics/ Gynaecology	52.8		9.3		5.0		67.1	
-Ophthalmology	26.7		6.7		3.0		36.4	
-Otolaryngology	15.3		3.7		1.7		20.7	
-Orthopaedic Surgery	27.5		4.7		2.7		34.9	
-Plastic Surgery	13.7		1.0		0.5		15.2	
-Urology	12.1		3.3		1.3		16.7	
SUBTOTALS		215.4		47.8		21.4		284.6
LABORATORY SPECIALTIES								
-Nuclear Medicine	5.3		0.0		0.5		5.8	
-Medical Biochemistry	4.1		0.5		0.8		5.4	
-Medical Microbiology	7.5		1.0		1.0		9.5	
-Pathology	31.8		4.7		4.7		41.2	
-Radiology Diagnostic	47.3		4.0		7.0		58.3	
-Radiation Oncology	6.3		0.5		1.7		8.5	
SUBTOTALS		102.3		10.7		15.7		128.7
ALL PHYSICIANS		1,854.2		239.5		333.6		2,427.3

* Includes an estimated 40 Canadian medical graduates switched from "New Entrants" because SMS missed their stay in Canadian postgraduate training.

APPENDIX III.a.

Count of Physicians in 1980 Stock Who Graduated From Medical School Between 1942 and 1961 Inclusive, by Specialty Discipline, Canada

	Graduates of 1942 to 1951	Graduates of 1952 to 1961	Total Graduates 1942 to 1961
All Physicians	6097	9745	15842
General/Family Practice	2560	4005	6565
All Specialists	3537	5740	9277
Internal Medicine	619	862	1481
Dermatology	41	64	105
Neurology	33	95	128
Paediatrics	234	373	607
Physical Medicine	27	54	81
Psychiatry	333	777	1110
Public Health	56	39	95
General Surgery	563	683	1246
Cardio&Thoracic Surgery	29	52	81
Neurosurgery	30	56	86
Obstetrics/Gynaecology	298	425	723
Ophthalmology	149	245	394
Otolaryngology	96	158	254
Orothopaedic Surgery	115	217	332
Plastic Surgery	20	65	85
Urology	84	136	220
Anaesthesia	336	548	884
Nuclear Medicine	14	32	46
Medical Biochemistry	8	22	30
Medical Microbiology	23	38	61
Pathology	160	316	476
Radiology Diagnostic	238	441	679
Radiation Oncology	31	42	73

Source: SMS Data System

NOTE: An assumption is made that graduates of 1942-51 retire/die 1981-1990, and graduates of 1952-61 retire/die 1991-2000. A further assumption is made that the age mix of physicians entering or leaving the stock from abroad are similar, and that the same % of physicians will continue to practice past 39 years post MD in 2000 as in 1980.

APPENDIX III. b.

Calculation of Projected Movement Abroad of Physicians by Specialty Discipline, 1981-2000, Canada

	Physicians Who Moved Abroad 1977-1982 (a)	Percentage Distribution	Projected Movement Abroad - Per Year 1981-90	1991-2000
All Physicians	3065	100	330.0	270.0
General/Family Practice	1439	46.9	154.8	126.6
All Specialists	1626	53.1	175.2	143.4
Internal Medicine	361	11.8	38.9	32.0
Dermatology	19	0.6	2.0	1.6
Neurology	46	1.5	4.9	4.0
Paediatrics	119	3.9	12.9	10.5
Physical Medicine	6	0.2	0.7	0.5
Psychiatry	162	5.3	17.5	14.3
Public Health	9	0.3	1.0	0.8
General Surgery	194	6.3	20.8	17.1
Cardio&Thoracic Surgery	14	0.5	1.6	1.3
Neurosurgery	14	0.5	1.6	1.3
Obstetrics/Gynaecology	138	4.5	14.8	12.1
Ophthalmology	70	2.3	7.6	6.2
Otolaryngology	46	1.5	4.9	4.0
Orothopaedic Surgery	93	3.0	10.0	8.1
Plastic Surgery	22	0.7	2.3	1.9
Urology	43	1.4	4.6	3.8
Anaesthesia	111	3.6	11.9	9.8
Nuclear Medicine	4	0.1	0.3	0.3
Medical Biochemistry	6	0.2	0.7	0.5
Medical Microbiology	5	0.2	0.7	0.5
Pathology	62	2.0	6.6	5.4
Radiology Diagnostic	74	2.4	7.9	6.6
Radiation Oncology	8	0.3	1.0	0.8

Source: SMS Data System

APPENDIX III.c.

Estimate of Physicians Returning to Postgraduate Training

According to the SMS data system, an average 116 general practitioners per year changed from general/family practice status to a "resident" status during the 1979-82 period. Another 162/year changed status to "specialist". An estimated 40 of these were "New Entrants" temporarily classified as general practitioners pending recognition of their specialty. Thus an estimated 122 general practitioners who became specialists may have been residents several years earlier but were not included as having taken postgraduate training. There were also 95 specialists/year who acquired a new qualification in another specialty or subspecialty. Thus, it is estimated that on average 238 general practitioners/year, and 95 specialists/year are lost from active physician stock to Canadian postgraduate training. Additionally, about 40 general practitioners are lost from general practitioner stock because of reclassification/recognition of an existing specialty certification.

APPENDIX III.d.

Projected Annual Average (1981-1990) Gross Outflow of Physicians From Stock by Certificated Specialty, CANADA

	Retirements/ Deaths		Movement Abroad		Return to PG Training	TOTALS
GENERAL/FAMILY PRACTICE		256.0		154.8	278.0*	688.8
MEDICAL SPECIALTIES						
-Internal Medicine	61.9		38.9		53.8	
-Dermatology	4.1		2.0		-	
-Neurology	3.3		4.9		2.8	
-Paediatrics	23.4		12.9		7.8	
-Physical Medicine	2.7		0.7		0.2	
-Psychiatry	33.3		17.5		1.0	
-Public Health	5.6		1.0		0.5	
-Anaesthesia	33.6		11.9		0.8	
SUBTOTALS		167.9		89.8	66.9	324.6
SURGICAL SPECIALTIES						
-General Surgery	56.3		20.8		11.0	
-Cardiovascular & Thoracic	2.9		1.6		1.5	
-Neurosurgery	3.0		1.6		0.5	
-Obstetrics/ Gynaecology	29.8		14.8		1.2	
-Ophthalmology	14.9		7.6		0.2	
-Otolaryngology	9.6		4.9		0.5	
-Orthopaedic Surgery	11.5		10.0		0.2	
-Plastic Surgery	2.0		2.3		0.5	
-Urology	8.4		4.6		-	
SUBTOTALS		138.4		68.2	15.6	222.2
LABORATORY SPECIALTIES						
-Nuclear Medicine	1.4		0.3		-	
-Medical Biochemistry	0.8		0.7		0.7	
-Medical Microbiology	2.3		0.7		1.2	
-Pathology	16.0		6.6		5.0	
-Radiology Diagnostic	23.8		7.9		4.8	
-Radiation Oncology	3.1		1.0		0.2	
SUBTOTALS		47.4		17.2	11.9	76.5
ALL PHYSICIANS		609.7		330.0	372.4	1312.1

* Including 40 GP's who change to Specialists without PG training (i.e. recognition of foreign credentials.)

APPENDIX III.d. (continued)

Projected Annual Average (1991-2000) Gross Outflow of Physicians From Stock by Certificated Specialty, CANADA

	Retirements/ Deaths		Movement Abroad		Return to PG Training	TOTALS
GENERAL/FAMILY PRACTICE		400.5		126.6	278.0*	805.1
MEDICAL SPECIALTIES						
-Internal Medicine	86.2		32.0		53.8	
-Dermatology	6.4		1.6		-	
-Neurology	9.5		4.0		2.8	
-Paediatrics	37.3		10.5		7.8	
-Physical Medicine	5.4		0.5		0.2	
-Psychiatry	77.7		14.3		1.0	
-Public Health	3.9		0.8		0.5	
- Anaesthesia	54.8		9.8		0.8	
SUBTOTALS		281.2		73.5	66.9	421.6
SURGICAL SPECIALTIES						
-General Surgery	68.3		17.1		11.0	
-Cardiovascular & Thoracic	5.2		1.3		1.5	
-Neurosurgery	5.6		1.3		0.5	
-Obstetrics/ Gynaecology	42.5		12.1		1.2	
-Ophthalmology	24.5		6.2		0.2	
-Otolaryngology	15.8		4.0		0.5	
-Orthopaedic Surgery	21.7		8.1		0.2	
-Plastic Surgery	6.5		1.9		0.5	
-Urology	13.6		3.8		-	
SUBTOTALS		203.7		55.8	15.6	275.1
LABORATORY SPECIALTIES						
-Nuclear Medicine	3.2		0.3		-	
-Medical Biochemistry	2.2		0.5		0.7	
-Medical Microbiology	3.8		0.5		1.2	
-Pathology	31.6		5.4		5.0	
-Radiology Diagnostic	44.1		6.6		4.8	
-Radiation Oncology	4.2		0.8		0.2	
SUBTOTALS		89.1		14.1	11.9	115.1
ALL PHYSICIANS		974.5		270.0	372.4	1616.9

* Includes 40 GP's who change to Specialists without PG training.

APPENDIX IV

1980 Target Physician Requirements

	1980 TARGET PHYS./POP. RATIO - CANADA	1980 TARGET PHYSICIAN REQUIREMENTS - CANADA (#'s OF PHYSICIANS)	
GENERAL/FAMILY PRACTICE	1:1307		18,535
MEDICAL SPECIALTIES			
Internal Medicine	1:8166	2967	
Dermatology	1:77,098	314	
Neurology	1:89,948	269	
Paediatrics	1:19,355	1252	
Physical Medicine	1:113,758	213	
Psychiatry	1:10,232	2368	
Public Health	1:131,856	184	
Anaesthesia	1:13,805	1755	
SUBTOTAL			9,322
SURGICAL SPECIALTIES			
General Surgery	1:12,292	1971	
Cardio/Thoracic	1:128,213	189	
Neurosurgery	1:165,761	146	
Obstetrics/Gynaecology	1:18,074	1341	
Ophthalmology	1:30,099	805	
Otolaryngology	1:51,456	471	
Orthopaedic Surgery	1:34,127	710	
Plastic Surgery	1:107,938	224	
Urology	1:56,464	429	
SUBTOTAL			6,286
LABORATORY SPECIALTIES			
Nuclear Medicine	1:286,501	85	
Medical Biochemistry	1:374,300	65	
Medical Microbiology	1:179,896	135	
Pathology	1:28,792	842	
Radiology Diagnostic	1:17,449	1389	
Radiology Oncology	1:156,801	155	
Medical Scientists	1:966,942	25	
SUBTOTAL			2,696
ALL PHYSICIANS	1:658		36,839

APPENDIX V.a.

Calculation of Increased Physician Requirements Due to Population Growth (Age-Sex Adjusted): 1981 - 2000

Medical care utilization data by age and sex groups for each specialty discipline (expressed as specialty-specific per capita costs of fee-for-service payments by provincial medical care plans) is available in the national medical care data bank for Ontario (fiscal 1980/81) and Quebec (calendar year 1980). These data are considered a reasonable proxy for Canada as a whole. For example, for General/Family Practice, the per capita costs in 1980 were:

Age/Group	Males	Females
0 - 14	$ 37.76	$ 35.10
15 - 24	$ 29.41	$ 57.24
25 - 44	$ 35.32	$ 67.27
45 - 64	$ 49.87	$ 64.35
65 - 74	$ 81.11	$ 86.60
75 +	$105.70	$134.57

Given these specialty specific data on per capita costs, it is possible to project utilization increases arising from population increases (including any changing age-sex mix) if age-sex specific population projections for Canada are available.

APPENDIX V.a. (continued)

This report has relied upon the "Projection 3" as outlined in the Statistics Canada publication "Population Projections for Canada and the Provinces 1976-2001". This projection has proved very close to actual experience between 1976-82, assuming a total fertility rate of 1.7 children per woman and a net international migration of 75,000 per year. The projection estimates a total Canadian population of 26,858,000 at the end of 1990; and 28,719,900 by the end of the year 2000. The population growth for 1981-2000 by age-sex grouping (expressed as percentage changes) is shown below.

Age Group	Males	Females
0 - 14	0.9%	0.9%
15 - 24	-14.3%	-14.9%
25 - 44	30.9	27.9%
45 - 64	44.7%	44.0%
65 - 74	30.7%	37.6%
75 +	60.2%	90.4%

For each specialty, the percentage increase in utilization (using costs as a proxy for utilization) and therefore increase in physician requirements because of demographic changes is calculated:

$$\left\{ \left[\frac{\sum_{\text{all age-sex groups}} \left(\text{1980 age-sex specific per capita cost}\right)\left(\text{projected 2000 age-sex specific population}\right)}{\sum_{\text{all age-sex groups}} \left(\text{1980 age-sex specific per capita cost}\right)\left(\text{1980 age-sex specific population}\right)} \right] - 1 \right\} \times 100\%$$

APPENDIX V.a. (continued)

For example, using General/Family Practice data:

(Males) Age Group	1980 per Capita Cost	1980 Population 1000's	1980 Cost $ Thousands	2000 Population 1000's	2000 Cost $ Thousands
0 - 14	$ 37.76	2,857.6	107,908	2,883.9	108,896
15 - 24	$ 29.41	2,394.5	70,422	2,051.6	60,338
25 - 44	$ 35.32	3,503.2	123,733	4,584.6	161,928
45 - 64	$ 49.87	2,235.9	111,504	3,236.4	161,399
65 - 74	$ 81.11	645.2	52,332	843.5	68,416
75 +	$ 105.70	322.8	40,475	517.2	65,012

The corresponding total costs for females is calculated as $746,241,000 for 1980; and $945,706,000 for 2000. Overall, the costs (expressed in constant dollars) for General/Family Practice are projected to increase from $1,252,610,000 in 1980 to $1,571,695,000 in the year 2000. In other words, there will be an increase of 25.5%; although the overall population increase will be only 19%, the increasingly elderly population accounts for a larger increase.

APPENDIX V.a. (continued)

Similar calculations were done for each specialty, and the results are shown below:

	Increase in Physician Requirements (Because of Age-Sex Adjusted Population Growth 1981-2000)		
	%	#'s	
GENERAL/FAMILY PRACTICE	25.5%		4726.4
MEDICAL SPECIALTIES			
Internal Medicine	37.3	1106.7	
Dermatology	19.1	60.0	
Neurology	30.5	82.0	
Paediatrics	1.6	20.0	
Physical Medicine	34.5	73.5	
Psychiatry	25.9	613.3	
Public Health*	41.6	76.5	
Anaesthesia	26.9	472.1	
SUBTOTAL			2504.1
SURGICAL SPECIALTIES			
General Surgery	32.5	640.6	
Cardio/Thoracic Surgery	38.8	73.3	
Neurosurgery	28.7	41.9	
Obstetrics/Gynaecology	21.1	283.0	
Ophthalmology	32.4	260.8	
Otolaryngology	20.2	95.1	
Orthopaedic Surgery	25.2	178.9	
Plastic Surgery	20.6	46.1	
Urology	32.4	139.0	
SUBTOTAL			1758.7
LABORATORY SPECIALTIES			
Nuclear Medicine	33.1	28.1	
Medical Biochemistry	25.0	16.3	
Medical Microbiology	29.1	39.3	
Pathology	28.5	240.0	
Radiology, Diagnostic	28.9	401.4	
Radiation Oncology	41.3	64.0	
SUBTOTAL			789.1
ALL PHYSICIANS			9778.3

* Adjustments for Public Health physicians target requirements may require some revision as the Appendix V.a. methodology relies upon fee-for-service earnings as a proxy for services, whereas the majority of public health physicians are salaried.

Adjustment to Physician Requirements Due to Increasing Proportion of Female Physicians

It is estimated that the 1980 physician stock was 13% female. The rate of increase of this proportion is dependent on firstly, the net annual addition to physician stock, and secondly, the anticipated proportion of female physicians comprising that net additional number. Thus, if as will be recommended in this report, the net annual addition is curtailed, the rate of increase of % female physicians will be reduced. It is therefore reasonable to assume as a maximum figure for the proportion of female physicians, the proportion estimated if existing policies and trends continue, i.e. as projected in Tables 1 and 2 of this report. Based on the average annual additions in Tables 1 and 2, over the period 1981-2000, the projected addition is 48,546 and the projected loss is 29,290 physicians. It is assumed that 37% of the additions will be female physicians since part of the additions to stock will be from Canadian postgraduate training (25-40% female 1981-1990, and 40-50% 1991-2000), but part of the addition to stock will be from abroad and likely to be a smaller proportion of female physicians. It is assumed that 10% of the losses will be female physicians.

The projected proportion of female physicians in the year 2000 is as follows:

	Supply 1980	1981-2000 Additions	1981-2000 Losses	Supply 2000
Females	4,897	17,962	2,929	19,930
Males	32,770	30,584	26,361	36,993
TOTAL	37,667	48,546	29,290	56,923

And the resulting proportion of female physicians is 35%. Although a number of "soft" assumptions have been used to arrive at this estimate, as explained earlier, it likely is an upper estimate. It is assumed that female physicians on average (over a lifetime) provide 80% of the medical services as compared to her male counterpart.

APPENDIX V. b. (continued)

The target requirements (and target physician:population ratios) for 1980 were predicated on the male-female physician mix at that time. The target requirements for the year 2000, allowing for age-sex adjusted population growth (and detailed in Appendix IV.a.) are accordingly also predicated on the male-female physician mix as for 1980. (The following calculations were based on slightly different population projections than used in Appendix V.a. However, this has a negligible effect on the calculated adjustment for female MD productivity, decreasing the numbers by only some 9 physicians.)

	1980 Target Requirements	Population Adjusted 2000 Target Requirements Given 1980 Male-Female M.D. Mix
General Practice	18,535	23,169
Medical Specialties	9,322	11,780
Surgical Specialties	6,286	8,012
Laboratory Specialties	2,696	3,474
TOTAL	36,839	46,435

Because of the increased proportion of female physicians, the 46,435 target requirements number of physicians would have 35% female physicians (instead of 13%). In other words, there would be 10,215.7 more female physicians than if the male-female mix were unchanged from 1980. Assuming an 80% productivity factor, and maintaining a 65%-35% split of male-female physicians, then requires an additional 2,197 physicians (1,428 male physicians + 769 female physicians).

The distribution of this female productivity adjustment of 2,197 additional physicians amongst the specialties is dependent on the distribution of additional female physicians among the specialties.

An ACMC study shows that at the end of 1981, 634 Year 1 PG trainees receiving postgraduate training in Canada were women, of whom 134 were "straight interns" enrolled in specialty training. At the end of 1982, another 147 women were in first year specialty training. The conclusion is that 281 entered specialty training (44% of total), leaving 353 (56%) to enter general/family practice. From this it may be legitimate to infer that 56 percent of the net inflow of female physicians will be into general practice.

APPENDIX V.b. (continued)

The distribution of female physicians among the specialties is approximated by using the distribution of Canadian citizen female postgraduate trainees in January 1982:

	#		%
MEDICAL SPECIALTIES			
Internal Medicine	271		
Dermatology	21		
Neurology	14		
Paediatrics	127		
Physical Medicine	16		
Psychiatry	137		
Public Health	20		
Anaesthesia	88		
SUBTOTAL		694	67.9%
SURGICAL SPECIALTIES			
General Surgery	59		
Cardio/Thoracic Surgery	1		
Neurosurgery	2		
Obstetrics/Gynaecology	68		
Ophthalmology	29		
Otolaryngology	1		
Orthopaedic Surgery	11		
Plastic Surgery	10		
Urology	3		
SUBTOTAL		184	18.0%
LABORATORY SPECIALTIES			
Nuclear Medicine	2		
Medical Biochemistry	3		
Medical Microbiology	5		
Pathology	49		
Diagnostic Radiology	75		
Radiation Oncology	10		
SUBTOTAL		144	14.1%
ALL SPECIALISTS		1022	100%

The female productivity adjustment of 2,197 additional physicians is therefore allocated 56% to General/Family Practice; and 44% to Specialists. Of the number allocated to specialists, the distribution among medical, surgical, and laboratory specialties is 67.9%, 18.0%, 14.1% respectively:

	Female MD Productivity Adjustment to Target Requirements for 2000
General Practice	1230.3
Medical Specialties	656.4
Surgical Specialties	174.0
Laboratory Specialties	136.3
ALL PHYSICIANS	2197.0

One further factor has to be taken into account in estimating adjustment for female MD productivity. Quebec has planned for an increase of 2495 General/Family Practice physicians by the year 2000, over and above increases necessitated by population increase (or changing age-sex mix). It is assumed though that Quebec's planned increase in General/Family Practice physicians has incorporated any female productivity adjustment for General/Family Practice physicians in Quebec. Accordingly, the General Practice female productivity adjustment is reduced by one third to avoid double counting.

The female productivity adjustment to be applied to target requirements for the year 2000 is therefore as follows:

	Female Productivity Adjustment
General Practice	861.2
Medical Specialties	656.4
Surgical Specialties	174.0
Laboratory Specialties	136.3
ALL PHYSICIANS	1827.9

APPENDIX V.c.

Calculation of Projected Physician Requirements (For the Year 2000)

	1980 Target Requirements		Population Growth (Age/Sex Adjust.)		Female MD Adjust.	Quebec Adjust.	2000 Target Requirements
GENERAL PRACTICE		18,535		4,726.4	861.2	2,495	26,618
MEDICAL SPECIALTIES							
Internal Medicine	2,967		1,106.7		256.3		4,330.0
Dermatology	314		60.0		19.9		393.9
Neurology	269		82.0		13.2		364.2
Paediatrics	1,252		20.0		120.1		1,392.1
Physical Medicine	213		73.5		15.1		301.6
Psychiatry	2,368		613.3		129.6		3,110.9
Public Health	184		76.5		18.9		279.4
Anaesthesia	1,755		472.1		83.2		2,310.3
SUBTOTAL		9,322		2,504.1	656.4		12,483
SURGICAL SPECIALTIES							
General Surgery	1,971		640.6		55.8		2,667.4
Cardio/Thoracic Surgery	189		73.3		0.9		263.2
Neurosurgery	146		41.9		1.9		189.8
Obstetrics/Gynaecology	1,341		283.0		64.3		1,688.3
Ophthalmology	805		260.8		27.4		1,093.2
Otolaryngology	471		95.1		0.9		567.0
Orthopaedic Surgery	710		178.9		10.4		899.3
Plastic Surgery	224		46.1		9.5		279.6
Urology	429		139.0		2.8		570.8
SUBTOTAL		6,286		1,758.7	174.0		8,219
LABORATORY SPECIALTIES							
Nuclear Medicine	85		28.1		1.9		115.0
Medical Biochemistry	65		16.3		2.8		84.1
Medical Microbiology	135		39.3		4.7		179.0
Pathology	842		240.0		46.3		1,128.3
Radiology, Diagnostic	1,389		401.4		70.9		1,861.3
Radiation Oncology	155		64.0		9.5		228.5
Medical Scientists	25		-		-		25.0
SUBTOTAL		2,696		789.1	136.3		3,621
ALL PHYSICIANS		36,839		9,778.3	1,827.9	2,495	50,941

APPENDIX VI. a.

IMMIGRATION OF PHYSICIANS TO CANADA

I.

	"Selected"	Sponsored Relatives and Refugees	Total
1975	546	246	792
1977	158	149	307
1979	113	185	298
1980	133	247	380
1981	160	222	382
1982	148	314	462

II.

1979-82 Average	138.5	242	380.5

APPENDIX VI.b.

Licensure of "Unselected" Immigrant Physicians

According to Canada Employment and Immigration, of the 149 unselected (including refugee) physician immigrants entering Canada in 1977, 65 appeared in the S.M.S. data bank by 1982. In other words, according to S.M.S. about 44% had either become licensed or were in postgraduate training proceeding to licensure. There appears to have been some slippage (perhaps due to physician retirement or death) in S.M.S. recording in that a sampling of "selected" immigrant physicians shows only 85% appear in the S.M.S. data base whereas by definition, almost all of these physicians should have become part of active Canadian physician stock. Accordingly, this Report estimated about 50% of the unselected physician immigrants eventually enter the physician stock in Canada. In other words, of the projected 242/year unselected (i.e. sponsored or refugee/) physicians entering Canada, 121 would enter active physician stock.

It would appear that it may take unselected immigrant physicians a number of years to get into the system (either into active stock or obtaining a postgraduate training position), since only 22% of the unselected physician immigrants entering Canada in 1980 appear in the S.M.S. data bank by 1982. Some time lag in physicians being recorded by S.M.S. may also be a factor inasmuch as a sampling of 1980 "selected" immigrant physicians also showed some that did not appear in the S.M.S. data bank by 1982.

Additional data was also obtained by Canada Employment and Immigration on the number of "unselected" physician immigrants entering Canada in 1975 who later appeared in the 1982 S.M.S. data base, showing that 123 (50%) of the 246 unselected physicians were recorded in S.M.S. records. Again, a sampling of "selected" immigrant physicians entering that same year who appear in S.M.S. shows some slippage implying that the actual number of "unselected" immigrant physicians entering stock may be somewhat higher. However, it was felt that the data for 1975 would not be useful for the projections in this Report since the total number of physician immigrants (about 800) that year was much higher than recent experience (see Appendix VI.a.), and furthermore, it was about that period of time that more selective criteria for immigrant physicians began to be put into place.

POST MD TRAINEES UNDER THE JURISDICTION OF CANADIAN FACULTIES OF MEDICINE (AS OF JAN. 1982) BY RANK AND LEGAL STATUS OF TRAINEE IN CANADA, AND COUNTRY OF MD DEGREE

				Earned MD			
Rank	Can. Citizen	Landed Immigrant	Employment Visa	Canada	U.S.	U.K.	Other
Rotating/Mixed Intern	953	97	28	917	6	8	147
Year 1 Family Medicine	397	5	1	397	1		5
Straight Internes	366	22	19	358	8		41
R - 1	698	105	106	661	9	32	207
R - 2	1276	117	128	1244	15	35	227
R - 3	787	98	120	753	16	44	192
R - 4	858	134	242	800	37	56	341
R - 5+	194	19	61	176	13	13	72
Fellows	150	36	245	140	30	48	213
Other Trainees	2		12	2			12
TOTALS	5681	633	962	5448	135	236	1457

Adapted from Tables 8a and 9a, "Survey of Post MD Clinical Trainees 1981/82 Update" by ACMC Research Division (1982).

NOTE: If one assumes that all Canadian medical graduates entering first year post MD are Canadian citizens, then by taking the difference between the total number of Canadian citizens in first year post MD, and the number of physicians in first year post MD who earned their degree in Canada there are 44 Canadian FMG's entering first year. The corresponding figure for 1983 is 38 Canadian FMG's. Therefore, it is estimated that about 40 Canadian FMG's and thus about 125 landed immigrant FMG's enter first year post MD. (There are in fact a number of landed immigrants who are also Canadian medical graduates, which implies a somewhat larger number of Canadian FMG's.) From the distribution of trainees in residency positions, (and assuming that about half of those entering first year post MD enter General Practice), it is estimated that 10-15 Canadian FMG's initially will enter the postgraduate training system at more senior levels. The total output of Canadian FMG's from Canadian PG training is thus estimated as about 55/year.

APPENDIX VII.b.

POST MD TRAINEES UNDER THE JURSIDICTION OF CANADIAN FACULTIES OF MEDICINE (AS OF JAN. 1983) BY RANK AND LEGAL STATUS OF TRAINEES IN CANADA, AND COUNTRY OF MD DEGREE

					Earned MD		
Rank	Can. Citizen	Landed Immigrant	Employment Visa	Canada	U.S.	U.K.	Other
Rotating/Mixed Intern	954	99	14	923	8	1	135
Year 1 Family Medicine	401	15	2	408		1	9
Straight Internes	356	22	12	359	3		28
R - 1	629	109	77	593	4	19	199
R - 2	1340	111	110	1317	10	31	203
R - 3	851	101	132	823	18	31	212
R - 4	888	110	206	833	30	58	283
R - 5+	224	20	78	215	16	24	67
Fellows	154	37	256	150	24	42	231
Other Trainees	9	2	13	7		1	16
TOTALS	5806	626	900	5628	113	208	1383

Adapted from Tables 9 and 12a, "Survey of Post MD Clinical Trainees (Internes and Residents) January 1, 1983" by ACMC Research Division (1984).

APPENDIX VIII

Physicians in Canada on Temporary Work Visas

	1980	1981	1982	1980-82 Average
1. Temporary Work Visas (Canada and Employment and Immigration Data)	1080	1127	1126	1111
2. Visa Training in Canadian Postgraduate Training (ACMC)	923	962	900	928
3. Estimated # of Visa Physicians in Practice [(1)-(2)]	157	165	226	183
4. Visa Extensions [of those visas listed in (1)] (CEIC)	635	653	698	662

Note: CEIC estimates that at any given time, up to 70% of visa trainees in postgraduate training are visa extensions.

APPENDIX IX

Outline to Develop Specific Implementation Strategies

The report Physician Manpower in Canada has discussed the present and projected physician oversupply for Canada overall, in terms of broad specialty groupings. A number of policy recommendations have been made, but recognizing the complexities of physician manpower planning and the desirability of extensive consultation with the groups and organizations involved, detailed implementation strategies were not presented in the Report. However, this Appendix does provide an outline and timeframe for developing such detailed strategies. It is worth emphasizing that the Report takes a national perspective with regards to physician manpower, but the Federal-Provincial Advisory Committee on Health Manpower certainly appreciates that a certain degree of flexibility is essential in light of particular concerns and circumstances faced by each province.

FRAMEWORK TO DEVELOP SPECIFIC IMPLEMENTATION STRATEGIES

RECOMMENDATION	PREREQUISITES	TIME FRAME
1. THAT THE FEDERAL AND PROVINCIAL GOVERNMENTS MAINTAIN AND IMPROVE THE NATIONAL PHYSICIAN MANPOWER DATA BASE BY CONSOLIDATING INDIVIDUAL PROVINCIAL DATA, WITH THE FEDERAL-PROVINCIAL ADVISORY COMMITTEE ON HEALTH MANPOWER TO CONTINUE AS A NATIONAL COORDINATING BODY ON PHYSICIAN MANPOWER. THERE SHOULD BE ADMINISTRATIVE AND RESEARCH STAFF SPECIFICALLY TO SUPPORT ONGOING STUDY OF PHYSICIAN MANPOWER (E.G. AS AFFECTED BY CHANGES IN HEALTH TECHNOLOGY).	. Consideration by Health and Welfare Canada of providing administrative and research staff to maintain and improve national medical manpower data base (with provinces to cost-share and provide planning and data input).	January, 1985
	.....	
2. THAT THE ANNUAL ENTRY OF "SELECTED" IMMIGRANT PHYSICIANS TO CANADA BE REDUCED FROM ABOUT 140/YEAR TO ABOUT 50/YEAR BY 1986.	. More effective measures to attract Canadians to under-serviced areas and specialties.	1984, ongoing
	. Approval in principle by Deputy Ministers and Ministers of Health.	Spring, 1985
	. Consultation with Employment and Immigration Canada.	1985
	. Reduction formula by province for selected immigrant physicians.	Spring, 1985
	. More stringent requirements for employers and communities to document inability to recruit qualified Canadians.	Winter, 1985
	. Limitations on number of physicians granted temporary work visas (see RECOMMENDATION 4 below).	January, 1986
	.....	

RECOMMENDATION	PREREQUISITES	TIME FRAME
3. THAT THE ANNUAL ADDITION TO CANADIAN PHYSICIAN STOCK FROM PHYSICIANS TRAINED ABROAD (I.E. FOREIGN MEDICAL GRADUATES, INCLUDING CANADIAN CITIZENS), EXCLUSIVE OF THOSE "SELECTED" IMMIGRANT PHYSICIANS, BE REDUCED FROM ABOUT 176/YEAR TO ABOUT 115/YEAR BY 1990.	. Information dissemination through Employment and Immigration Canada, medical schools, provincial licensing bodies, medical associations, ensuring that all foreign medical graduates (FMG's) seeking to immigrate to Canada and Canadians considering medical education abroad are thoroughly aware of limited opportunities to practise medicine.	1984, ongoing
	. Approval in principle by Deputy Ministers and Ministers of Health, other Deputies and Ministers and/or Cabinet as appropriate.	Spring, 1985
	. Consultation with National Committee on Physician Manpower, provincial licensing bodies, other appropriate groups.	Spring, 1985
	. Examination of legal and constitutional limitations of licensing barriers which would restrict FMG access to practice.	1985-86
	. Reduction formula by province for FMG's added to physician stock, to take into consideration such factors as: - provincial surplus/shortage of physicians - numbers of provincial citizens going abroad for undergraduate medical education.	Fall, 1986
	. More stringent training and licensing procedures for FMG's, e.g. 2-year internship requirement in Canada, restricted internship opportunities, more comprehensive evaluating examination.	January, 1987

.....

RECOMMENDATION	PREREQUISITES	TIME FRAME
4. THAT THE NUMBER OF PHYSICIANS PRACTISING IN CANADA ON TEMPORARY VISAS BE REDUCED BY AT LEAST 50% (FROM ABOUT 200 TO 100) BY THE YEAR 2000..	. More effective measures to attract Canadians to under-serviced areas and specialties.	1984, ongoing
	. Approval in principle by Deputy Ministers and Ministers of Health.	Spring, 1985
	. Reduction formula by province for physicians practising on temporary visas.	Fall, 1985
	.....	
5. THAT BY 1986 THE ANNUAL OUTPUT FROM CANADIAN POSTGRADUATE TRAINING INTO GENERAL PRACTICE BE REDUCED BY 125/YEAR, AND CONCURRENTLY THAT THERE BE AN INCREASE IN SURGICAL AND LABORATORY POSTGRADUATE TRAINING POSITIONS TO PROVIDE FOR A CORRESPONDING INCREASE IN OUTPUT FROM THOSE SPECIALTIES.	. Approval in principle by Deputy Ministers and Ministers of Health, other Deputies and Ministers and/or Cabinet as appropriate.	Fall, 1984
	. Consultation with medical schools, National Committee on Physician Manpower, Royal College, other appropriate groups.	Fall, 1984
	. Development of provincial training targets/reallocation formula.	Winter, 1984
	. Encouragement for Canadians to avoid general practice and enter surgical/laboratory specialties where shortages exist.	Spring, 1985
	. Adjustment of postgraduate training positions.	July, 1986 (for 1986-87 training year)
	.....	
6. THAT BY 1991 THERE BE A 20% REDUCTION IN OUTPUT FROM CANADIAN POSTGRADUATE TRAINING TO GENERAL PRACTICE STOCK. (THIS IS ADDITIONAL TO THE 125/YEAR REDUCTION EFFECTIVE 1986).	. Conditional upon reduction of medical school enrollment - see RECOMMENDATION 9 for Prereq-	SEE REC. 9
	. Adjustment of postgraduate training positions.	Fall, 1988 - Spring, 1989 (for 1990-91 training year)
	.....	

RECOMMENDATION	PREREQUISITES	TIME FRAME
7. THAT BY 1994 THERE BE A 20% REDUCTION IN OUTPUT FROM CANADIAN POSTGRADUATE TRAINING TO MEDICAL SPECIALTIES STOCK (THIS NECESSITATES A REDUCTION IN MEDICAL SPECIALTIES POSTGRADUATE TRAINING POSITIONS EFFECTIVE 1990).	. Approval in principle by Deputy Ministers and Ministers of Health, other Deputies and Ministers and/or Cabinet as appropriate.	1985
	. Consultation with medical schools, National Committee on Physician Manpower, teaching hospitals, CAIR, Royal College, other physician associations.	1986
	. Development of national/provincial/regional target for specialist training output.	1986-87
	. Analysis of impact on education, research and patient care and Development of acceptable alternative methods to meet educator/employer objectives.	1986-88
	. Allocation formula by province (See RECOMMENDATION 10).	1987
	.....	
8. THAT THE SPECIALTY-SPECIFIC NUMBER OF POSTGRADUATE TRAINING POSITIONS BE RATIONALIZED, INCLUDING CONSIDERATION OF REGIONALIZING SELECTED PROGRAMS IN ACCORDANCE WITH PRESENT AND PROJECTED SHORTAGES (OR SURPLUSES).	. See RECOMMENDATION 7.	SEE REC. 7
	.....	
9. THAT RELEVANT FEDERAL AND PROVINCIAL STAFF EXPLORE MECHANISMS FOR ENSURING THAT VISA TRAINEES RETURN TO THEIR COUNTRY OF ORIGIN.	. Meeting of relevant staff to explore implementing adequate control measures.	Fall, 1985
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RECOMMENDATION	PREREQUISITES	TIME FRAME
10. THAT CANADIAN MEDICAL SCHOOL ENROLLMENT (ENTRY CLASS) BE REDUCED 17% EFFECTIVE 1985. (ALTERNATIVELY, REDUCTIONS COULD BE PHASED IN OVER A THREE YEAR PERIOD. ADJUSTMENTS TO POSTGRADUATE TRAINING WOULD THEN ALSO HAVE TO BE PHASED IN OVER A THREE YEAR PERIOD.)	. Allocation formula, e.g., - Across-the-board reduction - Reduction by province/ region - English/French - Student: population ratio - Physician: population ratio - Critical mass	Fall/Winter 1984
	. Approval in principle by Deputy Ministers and Ministers of Health and Education, and/or Cabinet as appropriate.	Fall, 1984 - January, 1985
1985	. Consultation with medical schools, ACMC, physician associations, CAIR	Jan./Feb. 1985
	. Reduction of first year enrollment.	September, 1985 or 1985-1987
	.....	
11. THAT EFFECTIVE MEASURES BE ADOPTED TO ENSURE PHYSICIANS ESTABLISH ONLY IN AREAS OF	. Provincial consideration of mechanisms such as: - limited access to health insurance plans by region - differential fee structures - global caps on incomes.	Fall, 1984 ongoing
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TIME FRAME FOR IMPLEMENTATION PLAN